

# REVIEW OF MEDICAL AND VETERINARY MYCOLOGY

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## ERRATA

- No. 8, line 1, for '(H. J.)' read '(H. I.)'.  
126, line 5, for '*fuca*' read '*fusca*'.  
136, line 5, for '*concerntricum*' read '*concentricum*'.  
154, line 1, for 'MÁRAMOSI' read 'MÁRAMAROSI'.  
564, line 1, for '(D. J.)' read '(J. D.)'.  
592, line 1, for 'FIGG' read 'FIGGE'.  
601, line 1, for '(P. W.)' read '(F. W.)'.  
901, line 5, for '*duboisii*' read '*duboisii*'.  
1062, line 1, for '(P. U.)' read '(P. V.)'.  
1068, line 1, for 'SEGRETAN' read 'SEGRETAIN'.  
1105, line 1, for 'CAROLINE (LEONA)' read 'LEONA (CAROLINE)'.  
1149, line 10, for '*pedrosi*' read '*pedrosoi*'.  
1156, line 11, for '*laurentie*' read '*laurentii*'.  
1347, line 11, for '*molishianus*' read '*molischianus*'.  
1802, line 1, for 'FOLLEY' read 'FOLEY'.  
line 4, for '2' read '1'.  
1922, line 8, for '*M.*' read '*Sabouraudites*'.  
1923, line 7, for '*M.*' read '*Sabouraudites*'.  
1937, line 9, for 'phenergan' read 'phenergen'.  
2073, line 9 (from bottom), for 'CHAMBERLIN' read 'CHAMBERLAIN'.  
2287, line 8, for '*sudanensis*' read '*soudanense*'.  
2292, line 1, for '(R. A.)' read '(R. W.)'.  
2297, line 1, for '(C. T.)' read '(C. J.)'.  
2380, line 1, for '(F. H.)' read '(F. J.)'.



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# REVIEW OF MEDICAL AND VETERINARY MYCOLOGY

VOL. II

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PART I

1. CIFERRI (R.) & REDAELLI (P.). **Relazione sull' attività del 'Centro di Micologia Umana e Comparata' Pavia-Milano per gli anni 1942-1950.** [Report on the activity of the 'Centre of Human and Comparative Mycology', Pavia-Milan, for the years 1942-1950.]—11 pp., [? 1951.]

This report on the work of the Centre of Human and Comparative Mycology, Pavia-Milan, comprises a list of fungi isolated from human and animal lesions, and of investigations on a number of subjects, including antibiotics, the virulence of micro-organisms, nuclear and cytoplasmic division, the classification of the asporogenous yeasts, and systematics.

2. MARSHALL (Sir G.) & PERRY (K. M. P.). **Diseases of the chest.** Volume I, xi+456+[19] pp., 158 figs.; Volume II, vii+413+[31] pp., 192 figs., London, Butterworth & Co. (Publishers) Ltd., 1952. £7. 7s.

R. W. RIDDELL contributes a chapter in Volume I of this treatise (pp.162-196, 35 figs.) dealing with fungous infections of the lungs under the following headings: infections due to filamentous bacteria-like organisms, infections by yeast-like organisms, torulosis, conditions due to *Aspergilli* and similar ubiquitous fungi, infections due to dimorphic fungi, histoplasmosis, blastomycosis, and sporotrichosis, concluding with short bibliographies of each section.

3. HALEY (L. D.). **Pulmonary mycoses and the diagnostic laboratory.**—*Amer. J. med. Tech.*, 18, 1, pp. 1-19, 1952. [Abs. in *Excerpta med.*, *Amst.*, Sect. iv, 5, 9, p. 955, 1952.]

Routine diagnostic methods applicable in the laboratory diagnosis of pulmonary mycoses are summarized. The procedures for handling specimens, making direct examinations, cultures, and animal pathogenicity tests are described. The importance of each step and the pitfalls commonly encountered are discussed. Formulations of the necessary media and solutions are included in an appendix.

4. HOFFMEISTER (W.). **Klinische Mykologie.** [Clinical mycology.]—*Aertzl. Wschr.*, 6, 47, pp. 1105-1112, 2 figs., 1951.

On the basis of personal experience and the consultation of 82 contributions to the relevant literature the author has compiled a useful survey of the available information on various aspects of clinical mycology.

5. KEENEY (E. L.). **Medical fungi. The infections and allergies that they provoke.**—*Ariz. Med.*, 8, 8, pp. 19-33, 6 diag., 1951. [Abs. in *Excerpta med.*, *Amst.*, Sect. iv, 5, 9, p. 955, 1952.]

The problems involved in mycotic infections and the allergic phenomena associated with the presence of non-pathogenic fungus spores are discussed under the following headings: dermatophytosis, actinomycosis [*Actinomyces* spp., including *A. israeli*], coccidioidomycosis [*Coccidioides immitis*], blastomycosis [*Blastomyces dermatitidis*], histoplasmosis [*Histoplasma capsulatum*], cryptococcosis [*Cryptococcus neoformans*], candidiosis [*Candida albicans*],



sporotrichosis [*Sporotrichum schencki*], and aspergillosis, penicilliosis, and mucormycosis [*Aspergillus*, *Penicillium*, and *Mucor* spp.].

6. KLIGMAN (A. M.) & MESCON (H.). **Improved technic for diagnosing ringworm infections and moniliasis.**—*J. Amer. med. Ass.*, 146, 17, pp. 1563–1565, 2 figs., 1951.

A method is described of staining the [unspecified] agents of tinea and the causal organism of moniliasis (*Candida albicans*) in skin scrapings with basic fuchsin, which has proved superior to the potassium hydroxide technique in diagnostic accuracy.

7. LACAZ (C. DA S.). **Diagnóstico o tratamento das micoses pulmonares.** [Diagnosis and treatment of the pulmonary mycoses.]—*Rev. paul. Med.*, 38, 4, pp. 389–400, 3 figs., 1951.

The pneumomycoses are divisible into two main groups according to their agents, (1) comprising such true pathogens as *Cryptococcus neoformans*, *Paracoccidioides brasiliensis*, *Blastomyces dermatitidis*, *Histoplasma capsulatum*, *Coccidioides immitis*, *Actinomyces israeli*, *Proactinomyces* [*Nocardia*] *asteroides*, *A. brasiliensis*, and *Sporotrichum schencki*, and (2) fungi of doubtful or potential pathogenicity, represented by species of *Candida*, *Penicillium*, *Aspergillus*, *Hormodendrum*, *Geotrichum*, *Geotrichoides*, and so forth. The principal clinical, radiological, and mycological aspects of the mycoses of group (1) are discussed in relation to the author's experience.

8. MITCHELL (R. B.), ARNOLD (ANNA C.), & CHINN (H. J.). **Fungistatic activity of antihistamines.**—*J. Amer. pharm. Ass.*, 41, 9, pp. 472–475, 1952.

Of the antihistamines and related compounds tested at the U.S.A.F. School of Aviation Medicine, Randolph Field, Texas, for their potency against eight fungi pathogenic to man, only diparalene and lergigan completely inhibited the growth of all the species at a concentration of or below 0.1M, *Phialophora verrucosa*, *Sporotrichum schencki*, and *Candida albicans* being particularly resistant. Fungistatic activity did not depend on antihistaminic efficiency but appeared to be increased by chlorination.

9. JANKE (D.) & KALKOFF (K. W.). **Zur Kenntnis der Hautaktinomykose unter Berücksichtigung der Abhängigkeit cutaner Strahlenpilzhautung von der terminalen Strombahn.** [A contribution to the knowledge of skin actinomycosis with special reference to the dependence of cutaneous actinomycotic infection on the terminal arterioles.]—*Arch. Derm. Syph., Wien.*, 193, 1, pp. 81–98, 10 figs., 1951.

The following unusual features were observed at the University Skin Clinic, Marburg/Lahn, Germany, in an atypical actinomycosis of the skin in a 14-year-old girl suffering from neuradermitis: (1) disseminated actinomycotic foci on the cutis and subcutis, with formation of so-called pseudo-xanthomata; (2) no involvement of the internal organs during the four-year course of the disease; (3) determination of Bostrom's aerobic *Actinomyces* as the causal organism [cf. 1, Nos. 2056–2058; 2, No. 17]; (4) focal reactions to subcutaneous injection of hetero-vaccines prepared from anaerobic actinomycetes; and (5) apparent recovery following combined penicillin–sulphonamide (supronal) therapy.

10. HOLM (P.). **Studies on the aetiology of human actinomycosis. II. Do the 'other microbes' of actinomycosis possess virulence?**—*Acta path. microbiol. scand.*, 28, 4, pp. 391–406, 1951.

Seven cases of actinomycosis treated with penicillin in Danish hospitals are reported (two in detail). The treatment was evidently effective in respect of *Actinomyces israeli*, which disappeared from the lesions, but the patients remained ill, some for protracted periods (up to nearly two years). In these



cases the pus from lesions yielded *Bacterium actinomycetem comitans* and other concomitants of *A. israeli*, to which a certain conditional or relative virulence is accordingly assigned [1, No. 2056].

11. GARROD (L. P.). **The sensitivity of *Actinomyces israeli* to antibiotics.**—*Brit. med. J.*, 1952, 4771, pp. 1263–1264, 1952.

The following were the mean minimum inhibitory concentrations (in  $\mu\text{gm}$ . per ml.) of five antibiotics for 12 strains of *Actinomyces israeli*, of which six were isolated by the author from cases of actinomycosis at St. Bartholomew's Hospital, London, three were obtained from the National Collection of Type Cultures, and three were cultured from granules in excised tonsils: penicillin 0.06, streptomycin 23.7, aureomycin 4.2, chloramphenicol 2.8, and terramycin 2.2.

12. TEN BERG (J. A. G.). **De behandeling van actinomycose met aureomycine.** [The treatment of actinomycosis with aureomycin.]—*Ned. Tijdschr. Geneesk.*, 96 (iv), 45, pp. 2801–2806, 1 fig., 1 graph, 1952. [French, German, and English summaries.]

A brief survey of the literature on the application of aureomycin, bacitracin, and chloramphenicol (chloromycetin) to the therapy of actinomycosis (*Actinomyces israeli*) is followed by a full report on a case involving the abdomen in a 22-year-old male patient at a Rotterdam clinic. Various treatments instituted after ileocaecal resection proved unavailing, but a rapid and complete cure was effected by the daily administration of 2 gm. aureomycin [1, No. 2075].

13. MILLER (J. M.), LONG (P. H.), & SCHOENBACH (E. B.). **Successful treatment of actinomycosis with 'stilbamidine'.**—*J. Amer. med. Ass.*, 150, 1, p. 35, 1952.

A tumour that developed in the left mandible of a 51-year-old patient at the Veterans Administration Hospital, Fort Howard, Maryland, after the extraction of a tooth was diagnosed as actinomycosis [*Actinomyces israeli*] and successfully treated by a course of injections with stilbamidine (4, 4'-stilbenedicarboxyamidine) [1, No. 2096].

14. GARROD (L. P.). **Actinomycosis of the lung. Aetiology, diagnosis and chemotherapy.**—*Tubercle*, 33, 9, pp. 258–266, 8 figs., 1 graph, 1952.

This up-to-date survey of important aspects of actinomycosis (*Actinomyces* spp., including *A. israeli*), based on the author's experience as Professor of Bacteriology in the University of London and a perusal of the relevant literature, was presented as the Gloyne Memorial Lecture at the Annual Meeting of the British Tuberculosis Association, held at Cambridge on 26th June, 1952.

15. PERLSTEIN (W. H.). **Cervicofacial actinomycosis. Report of case.**—*New Engl. J. Med.*, 248, 2, pp. 67–69, 1 fig., 1953.

A case of cervicofacial actinomycosis (*Actinomyces bovis*) [*A. israeli*] which originated in a 30-year-old ex-soldier at Manchester, New Hampshire, in 1944, was not correctly diagnosed until 1949, when penicillin, already administered at an earlier stage, achieved a final cure. Some difficulties attending the establishment of a diagnosis of actinomycosis are briefly discussed.

16. BERNSTEIN (I. L.), COOK (J. E.), PLOTNICK (H. D.), & TENCZAR (F. J.). **Nocardiosis: three case reports.**—*Ann. intern. Med.*, 36, 3, pp. 852–863, 5 figs., 1952.

Following a review of the literature on nocardiosis (associated mostly with *Nocardia asteroides*), three cases are reported from Cincinnati (Ohio) hospitals, two in males aged, respectively, 39 and 60, and one in a 23-year-old female. The two former patients succumbed to the disease, but the third, who responded favourably to combined penicillin-streptomycin therapy, was still



surviving and asymptomatic after a four-year follow-up. One of the male patients was simultaneously suffering from anthracosilicosis at the time of admission.

17. STANGE (H.-H.). **Die exogene Aktinomykose der weiblichen Genitale.** [Exogenous actinomycosis of the female genitalia.]—*Zbl. Gynäkol.*, 73, 21, pp. 1689–1694, 1951.

From a study of the 110 published cases of actinomycosis of the female genitalia and his own clinical experience, the author concludes that some 10 per cent. were caused by exogenous infection of the Bostroem type [2, No. 9].

18. **Actinomycosis in a Horse.**—*J. Amer. vet. med. Ass.*, 122, 911, p. 81, 1953.

Organisms cultured from an encapsulated abscess in a fibrosed lymph node excised from the intermandibular space of a four-year-old thoroughbred horse at the University of Queensland Veterinary Clinic closely resembled *Actinomyces bovis* except that they were capable of growth under aerobic conditions.

19. FAVA (A.) & ZANACCA (G.). **Rara forma cistica di actinomicosi cardiaca in un bovino.** [A rare form of cystic cardiac actinomycosis in a bovine.]—*Zooprofilassi*, 6, 2, pp. 55–65, 5 figs., 1951. [French and German summaries.]

Examination of the heart of an apparently healthy eight-year-old cow slaughtered at Parma, Italy, in April, 1950, showed the presence of a large cyst associated with a fungus tentatively identified as *Actinomyces bovis*.

20. MORANT (KATHLEEN M.). **Actinomycosis in a Dog.**—*Vet. Rec.*, 63, 5, p. 82, 1951.

From Shenley, Hertfordshire, the author reports a case of actinomycosis in a 16-month-old spaniel [1, No. 2244 and next entry], the organism (*Actinomyces*) [*bovis*] having been cultured from the fluid of a soft swelling under the jaw. Excision of the growth and the administration twice daily for seven days of 125,000 units of oily penicillin resulted in a complete cure.

21. MENGES (R. W.), LARSH (H. W.), & HABERMANN (R. T.). **Canine actinomycosis. A report of two cases.**—*J. Amer. vet. med. Ass.*, 122, 911, pp. 73–78, 1 fig., 1953.

Two cases of canine actinomycosis are reported from Kansas. The lung tissue of one dog yielded *Actinomyces bovis* [see preceding entry] in pure culture. In the second case granules containing branching, intertwined, Gram-positive hyphae, 0.2 to 0.3  $\mu$  in diameter, were observed in tumorous masses in the omentum.

22. BOHL (E. H.), JONES (D. O.), FARRELL (R. L.), CHAMBERLAIN (D. M.), COLE (C. R.), & FERGUSON (L. C.). **Nocardiosis in the Dog. A case report.**—*J. Amer. vet. med. Ass.*, 122, 911, pp. 81–85, 3 figs., 1953.

From the Veterinary Clinic, Ohio State University, Columbus, the authors describe the clinical, mycological, and pathological findings in a nine-month-old terrier-type dog spontaneously infected by *Nocardia asteroides* [1, No. 1320].

23. RYFF (J. F.). **Encephalitis in a Deer due to Actinomyces bovis.**—*J. Amer. vet. med. Ass.*, 122, 911, pp. 78–80, 4 figs., 1953.

A case of encephalitis in a three-year-old deer caused by *Actinomyces bovis* is reported from the Wyoming State Veterinary Laboratory, Laramie. A rabbit inoculated intracerebrally with ground brain developed a cerebral abscess and meningoencephalitis from which the organism was readily recovered.

24. HAZEN (ELIZABETH L.), LITTLE (G. N.), & RESNICK (B. S.). **The Hamster as a vehicle for the demonstration of pathogenicity of Actinomyces bovis.**—*J. Lab. clin. Med.*, 40, 6, pp. 914–918, 3 figs., 1952.

At the Division of Laboratories and Research, New York State Department of Health, 28 three- to four-week-old male hamsters were tested for their



reactions to intraperitoneal injection of a single dose of eight strains of *Actinomyces bovis*. Symptoms resembling those of clinical actinomycosis were contracted by 21 (75 per cent.) of the animals, the presence of granules with clubs in the pus being a constant feature. In 19 the infections were severe, with extensive involvement of the abdominal cavity.

25. DAVID (M.), CHARLIN, MORICE, & NAUDASCHER. **Infiltration mycosique à *Aspergillus amstelodami* du lobe temporal simulant un abcès encapsulé. Ablation en masse. Guérison opératoire.** [Mycotic infiltration of the temporal lobe by *Aspergillus amstelodami* simulating an encapsulated abscess. Mass excision. Operative cure.]—*Rev. neurol.*, 85, 2, pp. 121–124, 2 figs., 1951.

*Aspergillus amstelodami* was identified for the first time as the agent of a cerebral abscess in a 42-year-old female [? in Paris]. Mass excision resulted in a complete operative cure.

26. IYER (S.), DODGE (P. R.), & ADAMS (R. D.). **Two cases of *Aspergillus* infection of the central system.**—*J. Neurol. Psychiat.*, n.s., 15, 3, pp. 152–163, 6 figs., 1952.

This joint contribution from the Neurological Unit, Boston City Hospital, the Neurological Service, Massachusetts General Hospital, and the Department of Neurology, Harvard Medical School, comprises full reports of two cases of aspergillosis of the central nervous system, one in a 23-year-old American soldier stationed in Korea and the other in a 10-month-old coloured male infant at Boston. In the former case (in which *Aspergillus fumigatus* was identified as the agent) the symptoms were consistent with those of a chronic, localized granuloma of the meninges of the cervical cord and brain stem, while the latter was manifested by chronic encephalitis with progressive dementia, convulsions, spastic paralysis, and cerebral calcification.

27. KING (A. B.) & COLLETTE (T. S.). **Brain abscess due to *Cladosporium trichoides*. Report of the second case due to this organism.**—*Bull. Johns Hopkins Hosp.*, 91, 4, pp. 298–305, 5 figs., 1952.

A fatal case of brain abscess caused by *Cladosporium trichoides* [I, No. 2406] in a 47-year-old patient, a labourer by occupation, is reported from the Guthrie Clinic, Sayre, Pennsylvania.

28. WÜNSCHE (K.). ***Penicillium*, eine Sterilitätsursache beim Rind?** [*Penicillium*, a cause of sterility in Cattle?].—*Wien. tierärztl. Wschr.*, 39, pp. 476–480, 1952. [English, French, and Italian summaries. *V.B.*, 23, No. 384.]

Spores of a species of *Penicillium* were observed in films from the genital mucosa of three bulls with normal semen but low fertility and in vaginal or cervical films in 25 of 38 cows with irregular conception, some being clinically normal while others had a catarrhal vaginitis. When spore-containing mucus was inoculated in slide cultures for four to five days at room temperature the fungus produced a mycelium. The exudate of a healthy cow injected intra-cervically with the *Penicillium* was rich in spores and yielded a culture of the fungus which it is suggested might have been concerned in the resultant infertility.

29. BOCOBO (F. C.). **The role of fungi in allergy.**—*J. Philipp. med. Ass.*, 27, 12, pp. 733–738, 1951.

A bibliography of 20 titles forms the basis of this review of the available information on the relation of fungi to respiratory allergy in man, which includes a useful key for the identification of the species predominantly concerned.



30. QUINTERO (J. M.). **Mold's culture by dialysis.**—*Ann. Allergy*, 10, 6, p. 731, 2 figs., 1952.

In the cultivation of moulds for allergic tests unduly close contact with the culture medium, with a consequent risk of contamination from the latter, has been avoided by the author in his method for their separation by a cellulose membrane. Cellulose tubes filled with the medium are autoclaved and hung inside a 1,000-ml., cotton-stoppered Erlenmeyer flask. Inoculation is effected by putting some spores on the surface of the tube, from which the resultant growth is easily detached with a spatula. In this way the pellicle dries more rapidly and produces a pure extract containing an abundance of allergenic material.

31. BEESON (P. B.). **Cryptococcic meningitis of nearly sixteen years' duration.**—*Arch. intern. Med.*, 89, 5, pp. 797–801, 2 figs., 1952.

From the Grady Memorial Hospital, Atlanta, Georgia, the author describes a case of chronic meningitis due to *Cryptococcus neoformans*. Nearly 16 years elapsed from the onset of the disease, when the patient was aged 18, until her death, and during most of this period her health was relatively good. The diagnosis was established initially by craniotomy and biopsy of a meningeal tubercle, and during the last eight years of life organisms were repeatedly recovered from the spinal fluid. In view of the chronic course and tendency to spontaneous remissions exhibited in this and other cases, caution would seem to be indicated in accepting reports of 'recovery' in patients suffering from cryptococcic meningitis [1, No. 2414].

32. WASSERMAN (E.). **Torula infection of the central nervous system. Report of two cases with a brief review of the literature.**—*Conn. med. J.*, 16, 2, pp. 85–88, 1952.

Two cases of cryptococcosis (*Cryptococcus neoformans*) are reported in male patients, aged 50 and 52, at the Boston City Hospital. Both were tentatively diagnosed as brain abscess until spinal fluid cultures revealed the etiological agent. Attempts at therapy with sulpha drugs and antibiotics proved unavailing, one case terminating fatally while the other ended in chronic mental deterioration.

33. COHEN (J. R.) & KAUFMANN (W.). **Systemic cryptococcosis. A report of a case with review of the literature.**—*Amer. J. clin. Path.*, 22, 11, pp. 1069–1076, 5 figs., 1952.

The clinical, pathological, and mycological data relating to a case of systemic cryptococcosis (*Cryptococcus neoformans*) in a 37-year-old patient, with the prostate as the possible primary focus, are fully reported from the Springfield Hospital, Springfield, Massachusetts. The bibliography comprises 21 contributions to the literature on the disease.

34. COLLINS (V. P.), GELLHORN (A.), & TRIMBLE (J. R.). **The coincidence of cryptococcosis and disease of the reticulo-endothelial and lymphatic systems.**—*Cancer*, N.Y., 4, 4, pp. 883–889, 1951.

Two new cases of cryptococcosis (*Cryptococcus neoformans*) are reported from the Presbyterian Hospital, New York, one in a 57-year-old male and the other in a 59-year-old female: in the former patient the fungal infection was associated with small-cell and in the latter with giant-follicle lymphosarcoma. From four other patients, two with Hodgkin's disease and one each with small-cell and giant-follicle lymphosarcoma, *C. neoformans* var. *innocuous* was recovered. According to a personal communication from Rhoda W. Benham, the variety differs from the type species in its failure to grow at 37° C. and in its non-pathogenicity to mice. All six cases are examples of Benham's group III (*J. infect. Dis.*, 57, pp. 255–274, 1935), associated with either lympho-



sarcoma or Hodgkin's disease, and occurred within a group of 33 patients with lymphoma who were examined mycologically. In a control series comprising the same number of persons without evidence of lymphoma, one case of pulmonary tuberculosis yielded *C. neoformans* var. *innocuous*.

The coincidence of cryptococcosis and Hodgkin's disease is presented as one aspect of a broader association of the former with reticulo-endothelial pathology, which was present in 51 of the 243 recorded cases of infection by *C. neoformans*.

35. CRUICKSHANK (D. B.) & HARRISON (G. K.). **A case of pulmonary cryptococcosis.**—*Thorax*, 7, 2, pp. 182–184, 5 figs., 1952.

*Cryptococcus neoformans* was isolated from the bronchial aspirate of a 50-year-old female patient at the Papworth Sanatorium, Cambridge, the best growth being made on Sabouraud's agar at room temperature. Post-mortem findings included the demonstration of the fungus in the cerebrospinal fluid and the subarachnoid layers of the medulla. Cryptococcosis is not endemic in Great Britain, where only a few cases have hitherto been reported [1, Nos. 1361, 1865], but the authors' patient had not travelled abroad.

36. DROUHET (E.) & SEGRETAINE (G.). **Actions réciproques entre phagocytes et *Torulopsis neoformans*.** [Reciprocal interactions of phagocytes and *Torulopsis neoformans*.]—*Bull. sci. roum., Sect. Sci. méd.*, 1, pp. 40–44, 4 figs., 1952.

Further evidence is presented from *in vitro* and *in vivo* experiments in support of the hypothesis that virulence in *Torulopsis* [*Cryptococcus*] *neoformans* is directly correlated with the thickness of the capsule surrounding the cells [1, Nos. 2113, 2254].

37. SEGRETAINE (G.), DROUHET (E.), & MARIAT (F.). **Essai de mise en évidence à l'état frais de la capsule d'une levure pathogène.** [An experiment in the demonstration of the capsule of a pathogenic yeast in the fresh state.]—*Bull. Microscop. appl.*, Sér. II, 2, 1–2, pp. 17–18, 1952. [*B.A.*, 26, No. 35314.]

The capsule of living *Torulopsis* [*Cryptococcus*] *neoformans* was found to vary from 2 to 8  $\mu$  in diameter, not to stain readily, to be invisible in unstained preparations except with phase microscopy, and to show marked birefringence.

38. MANGANIELLO (L. O. J.). **Experimental studies on torulosis. Part I. Preliminary experiments on therapy.**—*Amer. Surg.*, 17, 8, pp. 706–710, 1951.

In experiments at the Medical College of Georgia, Atlanta, mice reacted readily to the intracerebral injection of *Cryptococcus hominis* [*C. neoformans*]. The growth of the fungus seemed to be promoted by a pH ranging from 3.8 to 4 and inhibited at 8.4. A combination of immune rabbit and fresh guinea-pig serum was more effective in the therapy of the disease than the former alone. Injected into the peritoneum, anaesthesia proved definitely antagonistic to the pathogen.

39. PALMROSE (E. C.) & LOSLI (E. J.). ***Cryptococcus meningitis. Report of two cases.***—*Northw. Med.*, Seattle, 51, 2, pp. 121–126, 3 figs., 1952.

Full clinical details, followed by a discussion, are given of two fatal cases of cryptococcal meningitis (*Cryptococcus neoformans*) in 23- and 38-year-old patients at the Veterans Administration Hospital, Portland, Oregon.

40. RING (E. D.) & WILLIAMS (T. H.). **Torulosis.**—*Canad. med. Ass. J.*, 67, 4, pp. 360–361, 2 figs., 1952.

A case of cryptococcosis (*Cryptococcus neoformans*), believed to be the first record for western Canada, in a 37-year-old fisherman of mixed white and Indian descent, is reported from the Deer Lodge Hospital, Winnipeg, with brief observations on some important aspects of the disease.

41. SWEENEY (H. E. K.) & RUMBALL (J. M.). **Cryptococcosis. Report of three cases.**—*Sth. med. J.*, 44, 12, pp. 1152–1154, 1 fig., 1951.

The three cases of cryptococcosis (*Cryptococcus neoformans*) herein reported from the Veterans Administration Hospital, Coral Gables, Florida, bring the total number so far recorded at the time of writing to 197 [I, Nos. 1634, 2106].

42. CIFERRI (R.). **A neglected definition of the genus *Cryptococcus* made by Rivolta (1873).**—*Mycopathologia*, 6, 2, pp. 135–136, 1951.

The author in 1925 demonstrated that the name *Cryptococcus* is untenable. In this contribution he cites Rivolta's description (1873) of the genus and states that Vuillemin's definition of it in the medical sense (1901) is undoubtedly derived from Rivolta's account. *C. farciminosus* and *C. guttulatus*, described by Rivolta, are, respectively, *Histoplasma farciminosum* and the type species of the genus *Saccharomycopsis*. The type species of *Cryptococcus* emend. Vuillemin, *C. hominis*, is now ascribed by many mycologists to *Debaryomyces neoformans*. Rivolta's emendment of *Cryptococcus* as a medical genus of asporogenous yeasts antedated Vuillemin's amendment, while Robin's definition (1847) confuses human and fermentative yeasts. According to Rivolta, *Cryptococcus* is distinct from *Saccharomyces* (based on *S. cerevisiae*), but no valid type species is indicated.

43. POUNDEN (W. D.), AMBERSON (J. M.), & JAEGER (R. F.). **A severe mastitis problem associated with *Cryptococcus neoformans* in a large dairy herd.**—*Amer. J. vet. Res.*, 13, 47, pp. 121–128, 4 figs., 1952.

From the Bureau of Animal Industry, Beltsville, Maryland, the authors report an outbreak of cryptococcosis (*Cryptococcus neoformans*) involving the udders of 106 out of 235 cows in a Holstein-Friesian dairy herd. Visibly abnormal conditions developed in 55 of the affected animals. Severe infection was characterized by extreme distension of the gland and oedema of the surrounding tissues, accompanied by marked reduction in milk with a change to a grey-white, highly viscid, mucoid secretion.

Some improvement was effected by the segregation of diseased animals, better sanitation, and limited treatments with various antibiotics and drugs, coupled with care in milking-machine operation and certain dietary changes.

44. SIMON (J.), NICOLS (R. E.), & MORSE (E. V.). **An outbreak of bovine cryptococcosis.**—*J. Amer. vet. med. Ass.*, 122, 910, pp. 31–35, 7 figs., 1952.

The clinical and pathological features of an outbreak of cryptococcosis (*Cryptococcus neoformans*) affecting 50 out of 280 cows in a dairy herd are described from the Department of Veterinary Science, University of Wisconsin, Madison. The symptoms included transient anorexia, pyrexia, and diminution or cessation of milk flow. Infection is believed to have originated in a contaminated glucose bottle in which penicillin had been mixed before udder infusion. Attempts at antibiotic therapy proved unavailing.

45. INNES (J. R. M.), SEIBOLD (H. R.), & ARENTZEN (W. P.). **The pathology of bovine mastitis caused by *Cryptococcus neoformans*.**—*Amer. J. vet. Res.*, 13, 49, pp. 469–475, 7 figs., 1952.

The lesions of bovine mastitis caused by *Cryptococcus neoformans* are distinct from those of bacterial origin. The process consists primarily in the dissolution of the epithelium of the acini, ductules, and ducts consequent on the massive growth of the organisms in the lumina and the diffuse histiocytic or granulomatous reaction in the more chronic stages. The regional supramammary lymph nodes were commonly involved and the lungs of one of the cows examined revealed foci of cryptococcal infection.



46. SEIBOLD (H. R.), ROBERTS (C. S.), & JORDAN (E. M.). **Cryptococcosis in a Dog.**—*J. Amer. vet. med. Ass.*, 122, 912, pp. 213–215, 1 fig., 1953.

A yeast-like organism was detected by histological examination in the cystic centres of infectious granulomata in the meninges of the brain stem and along the ventricular system of a four-year-old pointer dog from Georgia at the School of Veterinary Medicine, Alabama Polytechnic Institute. On the basis of its typical morphology and the characteristic abundance of capsular material the fungus was identified 'with considerable certainty' by Dr. C. W. Emmons as *Cryptococcus neoformans*.

47. HOLZWORTH (J.). **Cryptococcosis in a Cat.**—*Cornell Vet.*, 42, 1, pp. 12–15, 2 figs., 1952.

A case of cryptococcosis involving the nose, eyes, and palate of a 6½-year-old male tiger cat is reported from Boston, Massachusetts. The autopsy further disclosed congestion, oedema, and firmness of the lungs, with occasional white spots, 1 to 5 cm. in diameter, visible on the surface and throughout the parenchyma. The fungus detected in the palatal lesion on examination at the Armed Forces Institute of Pathology, Washington, D.C., was enclosed in a definite shell and surrounded by a fairly wide, clear halo. Some of the bodies were budding. These features were considered to be highly suggestive of *Cryptococcus neoformans* [2, No. 36].

48. BAKER (R. D.), WARRICK (G. W.), & NOOJIN (R. O.). **Acute blastomycotic pneumonia. Report of a fatal case of twenty days' duration.**—*Arch. intern. Med.*, 90, 5, pp. 718–724, 3 figs., 1952.

The unusually brief clinical course of a case of acute blastomycotic pneumonia (*Blastomyces dermatitidis*) in a 41-year-old female patient at St. Vincent's Hospital, Birmingham, Alabama, greatly complicated the differential diagnosis of the disease, which was found at autopsy to be confined entirely to the lungs.

49. FRIEDMAN (J.), ROTH (J.), WERDER (A. A.), & SYVERTON (J. T.). **Fulminant experimental blastomycosis produced by employment of roentgen radiation and cortisone.**—*Fed. Proc.*, 11, 1, Part I, p. 415, 1952.

In the course of an extensive joint investigation by the Department of Radiology, Mt. Sinai Hospital, and the Department of Bacteriology and Immunology, University of Minnesota, Minneapolis, of the effects of radiation and cortisone acetate on infectious agents, these two agents, singly and in combination, were found to enhance remarkably the pathogenicity of *Blastomyces dermatitidis* to Swiss mice [1, No. 2050 and next entry]. An optimal effect was obtained by the employment of 400 r X-ray and 4 mg. cortisone in conjunction with the intraperitoneal injection of 1 ml. of a 1 in 150 suspension of a five-day-old yeast phase culture of the fungus. The survival period of the 16 animals thus treated ranged from 5 to 12 days (average 11·3), whereas 11 out of 16 injected with the fungus only were still surviving at 40 days and the other five succumbed after a period of 13 days and upwards.

50. HEILMAN (F. R.). **Effect of stilbamidine on blastomycosis in Mice.**—*Proc. Mayo Clin.*, 27, 23, pp. 455–458, 1952.

Used at the minimum dose of 5 mg. per kg. daily, stilbamidine prolonged the life of mice inoculated with *Blastomyces dermatitidis* [see preceding entry] at the Mayo Clinic, Rochester, Minnesota, but did not control pulmonary infection. At 10 mg. daily the drug inhibited pulmonary infection to a fair extent, but late deaths from invasion of the central nervous system were common. Pulmonary infection was totally inhibited by a dose of 25 mg. daily, but the animals succumbed to cerebral involvement.

51. CURTIS (A. C.) & HARRELL (E. R.). **Use of two stilbene derivatives (diethylstilbestrol and stilbamidine) in treatment of blastomycosis.**—*Arch. Derm. Syph., Chicago*, 66, 6, pp. 676–690, 10 figs., 1952.

From the University of Michigan Hospital, Ann Arbor, the authors report the complete disappearance of lesions in two male patients suffering from cutaneous blastomycosis (*Blastomyces dermatitidis*) after three to four months' daily injections of 3 mg. diethylstilbestrol. Two others with systemic blastomycosis improved rapidly under similar treatment with stilbamidine [1, No. 2409; 2, No. 51] at dosages of 3 and 7.2 gm., respectively. In *in vitro* tests at room temperature and 37° C. both hormones inhibited the growth of the fungus at a concentration of 0.01 mg. per ml.

52. ULRICH (E. W.), SUTER (L. S.), & DUNHAM (W. B.). **The sensitivity of *Blastomyces dermatitidis* to antifungal agents.**—*Mycologia*, 44, 1, pp. 115–118, 1952.

In studies at the Kennedy Hospital, Memphis, Tennessee, *Blastomyces dermatitidis* was resistant *in vitro* to terramycin, aureomycin, and potassium iodide. Some inhibition of growth occurred with relatively high dilutions of lupulon, humulon, ethyl vanillate [1, No. 2263a], actidione, and bacillomycin B. Of the materials tested, undecylenic acid and antibiotic X-G gave the most striking inhibitory effects.

53. ROBINSON (V. B.) & SCHELL (F. G.). **Blastomycosis in a Dog. Case report.**—*N. Amer. Vet.*, 32, pp. 555–558, 1951. [V.B., 22, No. 3653.]

The authors describe a case, apparently the eighth, of spontaneous pulmonary blastomycosis (? *Blastomyces dermatitidis*) in a dog [1, No. 1623] and review the literature of the disease in animals. The dog is considered likely to be an important reservoir for both human and animal infection in the United States.

54. GARZON (R.) & FERRARIS (L. V.). **Una nueva observación de granuloma paracoccidioidico.** [A new observation on paracoccidioidal granuloma.]—*Rev. Fac. Cienc. Méd. Córdoba*, 8, 2, pp. 161–170, 1950. [B.A., 27, No. 7161.]

Paracoccidioidal granuloma [*Paracoccidioides brasiliensis*], formerly rare in Argentina, is stated to have been developing with considerable frequency of late. An important feature of the disease is its polymorphism, which complicates diagnosis. A new case is reported, involving the skin of the leg and axilla of the arm, which was successfully treated with shock doses (12,000,000 units) of vitamin B<sub>2</sub>.

55. GUIMARÃES (F. N.). **Infecção do Hamster (*Cricetus auratus* Waterhouse) pelo agente da micose de Lutz (blastomicose sul-americana.) Nota preliminar.** [Infection of the Hamster (*Cricetus auratus* Waterhouse) by the agent of Lutz's mycosis (South American blastomycosis). Preliminary note.]—*Hospital, Rio de J.*, 40, 4, pp. 515–520, 2 figs., 1951. [English summary.]

Five out of six hamsters inoculated at the Oswaldo Cruz Institute, Rio de Janeiro, Brazil, with material from an oral lesion of South American blastomycosis [*Paracoccidioides brasiliensis*] developed extensive visceral infection of the human type. It is therefore superior for experimental purposes to the guinea-pig, in which the lesions are usually localized in the inoculated testes or in the satellite inguinal lymph node.

56. MÉNDEZ LEMAITRE (A.) & GARCÍA CORTES (A.). **Blastomicosis suramericana en Colombia. Informe del primer caso comprobado por exámenes histopatológicos y micológicos.** [South American blastomycosis in Colombia. Report on the first case confirmed by histopathological and mycological examinations.]



—*Med. y Cirug., Bogotá*, 15, 7, pp. 215–227, 1951. [Abs. in *Excerpta med., Amst.*, Sect. IV, 5, 12, p. 1260, 1952.]

The first case of South American blastomycosis [*Paracoccidioides brasiliensis*] confirmed and diagnosed by laboratory methods in Colombia is described as a mixed type with lymph node and visceral localization. The patient succumbed despite sulphadiazine therapy. The fungus was detected in pus from the lymph nodes and in the sputum.

57. BARRACK (B. B.). **Chromoblastomycosis in Queensland.**—*Aust. J. Derm.*, 1, 4, pp. 207–213, 2 figs., 1952.

Chromoblastomycosis is stated to be widely distributed in Queensland [1, Nos. 711, 712, and next entry], chiefly among men working in timbered country where cattle-raising is the principal industry. The upper limbs are most frequently affected. The most effective treatment is a combination of potassium iodide, taken internally in increasing doses up to 60 grains thrice daily, and X-ray therapy (up to 4,000 r).

58. POWELL (R. E.). **A survey of chromoblastomycosis in Queensland.**—*Aust. J. Derm.*, 1, 4, pp. 214–222, 2 pl., 1 fig., 2 graphs, 1 map, 1952.

In addition to four cases of chromoblastomycosis previously reported from Queensland [see preceding entry], 31 new ones have been investigated. All the 29 cases for which adequate data are available were males, mostly in the 70- to 80-year-old age group. The duration of the disease, which most commonly involved the dorsal surface of the hand and forearm, ranged from a month to 32 years. Twelve patients gave a history of antecedent local injury. Nearly half the subjects of the inquiry were engaged in handling timber. The distribution of chromoblastomycosis in the State extends from Cairns to Texas and from Richmond to the coast. The causal organisms were isolated from 19 cases and identified in 17 with *Fonsecaea cladosporium* (Simson) n.comb. and in two with *F. pedrosoi* var. *cladosporioides*.

59. DEFRENNE (P.). **Troisième cas de chromoblastomycose au Congo belge.** [Third case of chromoblastomycosis in the Belgian Congo.—*Ann. Soc. belge Méd. trop.*, 32, 5, pp. 417–420, 1952. [Flemish summary.]

*Phialophora pedrosoi* was isolated from a verrucose lesion on the right instep of a 35-year-old male native of the Belgian Congo, this being the third record for the country [cf. 1, Nos. 2422, 2423].

60. THYS (A.), COURTOIS (G.), & VANBREUSEGHEM (R.). **À propos de 9 nouveaux cas congolais de chromoblastomycose. Essai et échec du traitement par la pentamidine.** [In connexion with nine new cases of chromoblastomycosis from the Congo. Assay and failure of pentamidine therapy.]—*Ann. Soc. belge Méd. trop.*, 32, 5, pp. 491–500, 2 pl., 1952. [Flemish summary.]

In collaboration with D. H. BAKER, BERTRAND, A. DE MUYNCKE, P. LIMBOS, & R. VERSELDER, the authors report nine further cases of chromoblastomycosis (*Phialophora pedrosoi*) among natives of the Belgian Congo [see preceding entry]. Diagnosis was based on histopathological examination of the lesions, confirmed in four cases by culture. Surgical intervention is essential for the cure of the disease; two attempts at its control by pentamidine therapy proved unavailing.

61. SHOUCAIR (E. S.), GORDON (K. R.), GRANT (L. S.) & HILL (K. R.). **Chromoblastomycosis in Jamaica. A case report.**—*W. Indian med. J.*, 1, 2, pp. 211–215, 7 figs., 1952.

*Phialophora pedrosoi* was isolated from the papillomatous nodules on the left hand and arm of a 36-year-old labourer at the Kingston Public Hospital, Jamaica, this being probably the first record of the disease on the island. The

lesions developed as a sequel to a cut by a saw on the index finger. Penicillin and aureomycin therapy proved valueless, but an improvement was effected by the internal administration of potassium iodide over a protracted period.

62. CONWAY (H.) & BERKELEY (W.). **Chromoblastomycosis (mycetoma form) treated by surgical excision. Correction of defect by cross leg pedicled flap.**—*Arch. Derm. Syph., Chicago*, 66, 6, pp. 695–702, 3 figs., 1952.

Information on the etiology, pathology, and treatment of chromoblastomycosis is summarized and a case reported in which the granulomatous lesion on the left foot of a 44-year-old negro patient at the New York Hospital was cured by surgical excision and plastic reconstruction. Cultures of tissue and exudate from the lesion yielded *Hormodendrum (Fonsecaea) [Phialophora] pedrosoi*, another name assigned to the fungus being *P. verrucosa*.

63. BURKE (RUTH C.), SALVIN (S. B.), & GERLOFF (R. K.). **Cultivation of *Coccidioides immitis* in the developing hen's egg.**—*Proc. Soc. exp. Biol., N.Y.*, 81, 1, pp. 91–94, 1952.

At the Rocky Mountain Laboratory, Hamilton, Montana, 630 three- to 12-day-old chick embryos were inoculated with a suspension of the mycelial phase of *Coccidioides immitis* in physiologic saline by way of the yolk sac, allantoic sac, or chorio-allantoic membrane routes [1, No. 1666]. Mortality depended more on the age of the embryo than on the inoculation channel, ranging from 73 to 100 per cent. during the five-day incubation period in the three- to eight-day embryo group as against only 7 to 24 per cent. in the nine- to 12-day. A few sporangia or similar elements developed in the inoculated eggs.

64. TARBET (J. E.), WRIGHT (E. T.), & NEWCOMER (V. D.). **Experimental coccidioidal granuloma. Developmental stages of sporangia in Mice.**—*Amer. J. Path.*, 28, 3, pp. 901–917, 4 pl., 1952.

The inoculum used for intraperitoneal injections in the authors' study of the successive stages in the development of the mycelium of *Coccidioides immitis* into sporangia in mice consisted of the spherule-containing pus from abscesses in a patient at the Veterans Administration Center Hospital, Los Angeles, California. Young spherules attract polymorphonuclear leucocytes, while mature ones become the centres of an epithelioid response. Each new generation of spherules is accompanied by a revival of the suppurative reaction. The alternating, cyclical histological response clearly discernible in the mouse during the first week after injection corresponds to the course followed by the pathogen in the human system.

65. SULKIN (S. E.) & PIKE (R. M.). **Laboratory-acquired infections.**—*J. Amer. med. Ass.*, 147, 18, pp. 1740–1745, 1 graph, 1951.

Of a total of 1,342 infections presumably acquired in the course of laboratory work in the United States [cf. 2, No. 76] during the past two decades, 63 were caused by fungi, principally *Coccidioides immitis* [1, Nos. 293, 727, 1660].

66. FALKINBURG (L. W.). **Disseminated coccidioidomycosis. Report of a case in the New England area.**—*J. Amer. med. Ass.*, 150, 3, pp. 216–217, 1 fig., 1952.

Attention is drawn to several points of special interest in this report on a case of disseminated coccidioidomycosis (*Coccidioides immitis*) in a 49-year-old male patient at the Roger Williams General Hospital, Providence, Rhode Island. The existence of fungal infection was revealed only by an autopsy, without which the diagnosis would unquestionably have been one of acute miliary tuberculosis. In addition to the present case, there have already been a few reports of the disease in New England [1, Nos. 1660, 1893], and further sporadic outbreaks outside the endemic area of California [1, Nos. 1561, 1658, 1887] are to be anticipated. Two positive cultures were obtained from the



blood and one from a draining sinus, and the risks involved in the handling of such material by laboratory personnel are emphasized [see preceding entry].

67. MALONEY (P. J.). **Addison's disease due to chronic disseminated coccidioidomycosis.**—*Arch. intern. Med.*, 90, 6, pp. 869–878, 7 figs., 1952.

From Tulare-Kings Counties Hospital, Springville, California, the author presents full reports on two cases of Addison's disease in 62- and 44-year-old male patients due to extensive destruction of the adrenal glands by disseminated coccidioidomycosis (*Coccidioides immitis*).

68. STUBBS (F. H.) & DIXON (J. L.). **Coccidioidomycosis: Report of a case in Georgia.**—*J. Med. Ass. Georgia*, 40, 11, pp. 469–470, 1951.

A case of progressive coccidioidomycosis [*Coccidioides immitis*] is described from Georgia. It is believed to be the first reported in a native of the State, except in returned veterans.

Evidence is presented relating to the course of infection, the long period during which the disease was confused with more common respiratory infections, and its subsequent identification by laboratory methods.

[It seems likely that the infection may have been acquired in California nearly 20 years earlier.]

69. NEGRONI (P.), BRIZ DE NEGRONI (C.), DAGLIO (C. A. [N.]), VIVANCOS (C.), & BONATTI (A.). **Estudios sobre el Coccidioides immitis Rixford et Gilchrist. XII. Cuarta contribución al estudio de la endemia argentina.** [Studies on *Coccidioides immitis* Rixford & Gilchrist. XII. Fourth contribution to the study of the Argentine endemiology.]—*Rev. argent. Dermatosis*, 36, 4, pp. 269–275, 1 map, 1 plan, 1952. [English summary.]

In this further inquiry into the endemiology of coccidioidomycosis (*Coccidioides immitis*) in Argentina [I, No. 1380], 2,213 intradermal tests with coccidioidin (1 in 100) and paracoccidioidin (1 in 10) were performed on rural schoolboys in the provinces of Tucumán and Santiago del Estero.

The largest number of positive reactors to paracoccidioidin (4.7 per cent.) were found at Los Bulacio, Tucumán. The existence of an endemic zone of coccidioidomycosis was demonstrated in Santiago del Estero, stretching from Las Termas (Rio Hondo) with 19.7 positive reactors to the western confines of the city of Santiago del Estero (17.6). The area is situated in the arid region of the Chaco-Pampeana plain.

70. ZMAJEVICH (G.). **L'istoplasmosi polmonare.** [Pulmonary histoplasmosis.]—*Rass. giul. Med.*, 7, 10, pp. 322–328, 1951. [Abs. in *Excerpta med.*, *Amst.*, Sect. VI, 6, 11, p. 1561, 1952.]

This is a critical survey of the available information on various aspects of histoplasmosis (*Histoplasma capsulatum*), including diagnosis, etiology, geographical distribution, mode of infection, course and clinical features of the disease, skin-testing, prognosis, and therapy.

71. VERGE (J.). **Les maladies communes à l'Homme et aux animaux. L'histoplasmosis.** [Diseases common to Man and animals. Histoplasmosis.]—*Encycl. vét.*, 1951, 5–6, pp. 195–201, 1951.

The author briefly reviews the available information (with 46 references to the literature) on histoplasmosis (*Histoplasma capsulatum*) under the headings of definition, species affected, parasitology, clinical study, diagnosis in man and dogs, etiology, and prophylaxis and treatment.

72. TASSINARI (G.). **In tema di micosi : aggiornamento sull' istoplasmosi di Darling.** [On the subject of mycoses: review of Darling's histoplasmosis.]—*Settim. med.*, N.S., 39, 8, pp. 225-231, 1951.

The information on histoplasmosis (*Histoplasma capsulatum*) contained in some recent important contributions to the relevant literature is summarized.

73. VACCARO (H.) & FERRADA URZUA (L.). **Encuesta de sensibilización a la coccidioidina e histoplasmina en 95 alumnos y ayudantes del Instituto de Microbiología e Inmunología de la Universidad de Chile.** [Investigation of sensitivity to coccidioidin and histoplasmin in 95 students and assistants at the Institute of Microbiology and Immunology of the University of Chile.]—*An. Fac. Med. Montevideo*, 37, 5-6, pp. 151-152, 1952. [English summary.]

There were only four positive reactors in this series of tests, three to histoplasmin (one out of 75 Chileans and two out of 10 Colombians) and one (a Venezuelan) to coccidioidin [cf. I, No. 1891].

74. CARIKER (MILDRED). **Histoplasmosis.**—*Minn. Med.*, 35, 3, pp. 213-217, 220, 1952.

This is a review of 13 contributions to the literature on histoplasmosis (*Histoplasma capsulatum*) in the United States, whence at least three-quarters of the cases have been reported.

75. ENDE (N.), PIZZOLATO (P.), & ZISKIND (J.). **Hodgkin's disease associated with histoplasmosis.**—*Cancer*, 5, 4, pp. 763-769, 1952. [*B.A.*, 26, No. 35313.]

Two cases of Hodgkin's disease associated with histoplasmosis [I, No. 1867] are reported. Cultures from one of these cases yielded *Histoplasma capsulatum* and was negative for tuberculosis. It is thought that some cases of Hodgkin's disease associated with tuberculosis may have been due to histoplasmosis and Hodgkin's disease. Culture of lymph nodes on Sabouraud's dextrose agar, Petragani agar, and blood agar is recommended for use in suspected cases of fungus infection.

76. FURCOLOW (M. L.), GUNTHEROTH (W. G.), & WILLIS (M. J.). **The frequency of laboratory infections with *Histoplasma capsulatum*. Their clinical and X-ray characteristics.**—*J. Lab. clin. Med.*, 40, 2, pp. 182-187, 1952.

The conversion rate from negative to positive in histoplasmin skin tests among 56 employees at the Mycoses Laboratory of the Public Health Service, Kansas City, over a period of 6½ years was 13.23 per 100 susceptible person months compared with 0.47 for a group of 5,689 schoolchildren in the same area. The difference between these rates is statistically significant and suggests that work in the laboratory increased liability to infection by *Histoplasma capsulatum* [cf. 2, No. 65].

In seven of the 17 personnel under observation (41 per cent.) the skin test conversion was accompanied by a definite clinical illness, and in five of the seven by simultaneous X-ray changes in the lungs.

77. HELMBRIGHT (A. L.) & LARSH (H. W.). **Size of the spores of *Histoplasma capsulatum*.**—*Proc. Soc. exp. Biol.*, N.Y., 81, 2, pp. 550-551, 1 graph, 1952.

In this joint contribution from the Communicable Disease Center, Public Health Service, Federal Security Agency, and the Department of Plant Sciences, University of Oklahoma, the authors describe the methods and results of their experiments to verify the conclusions of Cozad and Furcolow (*J. infect. Dis.*, 92, pp. 77-84, 1953), as to the size of the spores of *Histoplasma capsulatum*.

The measurements were made with a high-power oil immersion lens on 1,000 spores from each of five strains of the fungus. To procure a homogenous



suspension the entire culture was scraped from the potato dextrose agar slant and macerated in a sterile glass tissue grinder. In general, the results confirm those obtained in the study mentioned above, substantiating the high frequency of small spores, only 6.8 per cent. of the 5,000 measured exceeding  $4.8\mu$  in diameter.

78. KURUNG (J.). **The isolation of *Histoplasma capsulatum* from sputum.**—*Amer. Rev. Tuberc.*, 66, 5, pp. 578–587, 5 pl., 1952. [Spanish and French summaries.]

At the State Tuberculosis Hospital, Ray Brook, New York, the author found that *Histoplasma capsulatum* dies rapidly in sputum. It is consequently recommended that freshly expectorated material be cultured, preferably on brain heart infusion blood agar or modified Campbell's blood agar [1, No. 936], in attempts at the isolation of the fungus.

79. PRIOR (J. A.) & SASLAW (S.). **Effect of repeated histoplasmin skin tests on skin reactivity and collodion agglutination.**—*Amer. Rev. Tuberc.*, 66, 5, pp. 588–593, 1952. [Spanish and French summaries.]

At the Department of Medicine, Ohio State University, Columbus, no significant change in skin reactivity was observed in 22 healthy students following seven weekly histoplasmin skin tests. There were modifications in humoral antibody titres in 10 out of 15 positive reactors, while transient collodion agglutinations [1, Nos. 1412, 1413, 1687] of potential significance appeared in the serum of six between the third and sixth weeks after the initial skin test. None of the 12 subjects in a control group receiving only one skin test showed any change in humoral antibodies during the next month.

80. SNOKE (P. O.). **Histoplasmosis in Lancaster County, Pennsylvania. A report of two oral indigenous cases with one recovery and one autopsy.**—*Penn. med. J.*, 54, 10, pp. 957–959, 1951.

Full clinical details are given of two cases of histoplasmosis (*Histoplasma capsulatum*) involving the buccal cavity in males aged 52 and 38 years at Lancaster, Pennsylvania. The former recovered following the oral administration of potassium iodide and intravenous injections of neosalvarsan, but the latter succumbed despite the same treatment supplemented by deep X-ray and terramycin therapy.

81. CHEDIAK (A. B.), CHEDIAK (M.), & MAGRIÑAT (G.). **Histoplasmosis. Resumen de la enfermedad. Presentación de un caso diagnosticado por punción ganglionar.** [Histoplasmosis. Review of the disease. Presentation of a case diagnosed by ganglionic puncture.]—*Rev. Kuba Med. trop.*, 7, 11–12, pp. 135–143, 9 figs., 1951.

Following a review of the available information on histoplasmosis (*Histoplasma capsulatum*) based on 76 contributions to the pertinent literature, the authors report a generalized case in a three-year-old boy at the Hospital Universitario, Habana (the second from Cuba and the first in a child on the island). The diagnosis was established by the puncture of a ganglion in the left thigh. A cure was effected by means of diamidin.

82. CHRISTOPHERSON (W. M.), MILLER (MADELYN P.), & KOTCHER (E.). **Examination of human appendixes for *Histoplasma capsulatum*.**—*J. Amer. med. Ass.*, 149, 18, pp. 1649–1649, 1952. [*B.A.*, 26, No. 35312.]

Of 100 appendixes examined for the presence of *Histoplasma capsulatum* by culture and by histological sections none was found to harbour the organism. An additional 1,307 appendixes examined for structures morphologically similar to *H. capsulatum* also gave negative results. One appendix obtained at autopsy from a previously proved case of disseminated generalized *H. capsulatum* was found to be positive by culture and histological methods.

83. CRONK (G. A.). **Pulmonary calcification and histoplasmin sensitivity in New York State.**—*N. Y. St. J. Med.*, 51, 16, pp. 1919–1923, 2 figs., 1 diag., 2 graphs, 1 maps, 1951.

Of 8,646 students (mean age 18) subjected to tuberculin and histoplasmin skin tests at Syracuse University, New York, 1,358 (15.7 per cent.) reacted positively to the former, 494 (5.7) to the latter, and 103 (1.2) to both antigens. Of all the positive reactors, 141 (7.2 per cent.) exhibited pulmonary calcification, which also occurred in 72 (1.08) of the non-reactors. Among the cases of pulmonary calcification were 78 (36.5 per cent.) histoplasmin- and 49 (23.1) tuberculin-positive, while 14 (6.8) reacted positively to both.

In the course of the ensuing discussion, J. J. Wilt reported five cases of pulmonary calcification (until recently regarded as definite evidence of tuberculosis) which may have been associated with histoplasmosis.

84. SCHUBERT (J.), AJELLO (L.), STANFORD (SARAH), & GRANT (VIRGINIA Q.). **Variation in complement fixation antigen production by different strains of *Histoplasma capsulatum* grown on two media.**—*J. Lab. clin. Med.*, 41, 1, pp. 91–97, 1953.

At the Communicable Disease Center, Public Health Service, Federal Security Agency, Atlanta, Georgia, differences in potency were observed among the ten single-strain lots of histoplasmin prepared for the determination of their relative antigenicity in complement fixation tests.

Pooled lots of histoplasmin were found to be less reactive than the highest-titred components. A method for the production of potent histoplasmin antigens on a glycogen medium in a relatively short time (nine weeks) [1, No. 1189] proved inferior to another procedure utilizing coccidioidin [1, No. 1144] with an incubation period of six months.

With one exception, tests with sera from nine proved cases of human histoplasmosis (*Histoplasma capsulatum*) confirmed the results obtained with rabbit sera.

85. COLLIER (W. A.) & DE LA FUENTE (A. A.). **De histoplasmine-reactie te Paramaribo (Suriname).** [The histoplasmin reaction at Paramaribo (Surinam).]—*Nederl. Tijdschr. Geneesk.*, 97, 4, pp. 208–213, 1953. [English summary.]

Positive histoplasmin reactions developed in 358 out of 831 (43.1 per cent.) of the patients tested in Paramaribo (Surinam) hospitals, the maximum percentages of 54.7 and 53.7 occurring in the 31 to 40 and 41 to 50 age groups, respectively. There were only nine (16.9 per cent.) positive reactors in the 0- to 10-year-old group. Positive responses to the histoplasmin test are still obtainable after 72 hours, so that the figures from 48-hour readings may be somewhat too low.

86. COLLIER (W. A.) & WINCKEL (W. E. F.). **Beiträge zur geographischen Pathologie von Suriname. 6. Histoplasmose bei Säugetieren in Suriname.** [Contributions to the geographical pathology of Surinam. 6. Histoplasmosis of mammals in Surinam].—*Leeuwenhoek ned. Tijdschr.*, 18, 4, pp. 349–356, 1952.

The examination of preparations from the spleens of various mammals in Surinam revealed intra- and occasionally extracellular elements which were indistinguishable from *Histoplasma* [*capsulatum*]. Inoculation experiments with this material on white mice also resulted in infection of the spleen.

87. CAMPINS (H.) & SCHARYJ (M.). **Investigación de la sensibilidad a la histoplasmina en Venezuela.** [Investigation of sensitivity to histoplasmin in Venezuela].—*Arch. venez. Pat. trop.*, 2, 1, pp. 75–82, 1950. [English summary. Received December, 1952.]

Of 1,836 pupils aged 6 to 18 from schools at Barquisimeto, Venezuela, 253



(13.7 per cent.) reacted positively to cutaneous tests with histoplasmin, the cases being almost equally distributed between the sexes (131 boys and 122 girls). X-ray examination revealed residual pulmonary lesions, mostly calcified, in 44 of the positive reactors. So far the existence of the disease has not been demonstrated in the country.

88. JACKSON (F. I.). **Histoplasmosis in South Africa.**—*S. Afr. med. J.*, 26, 22, pp. 460-461, 1952.

Multiple calcified spots on the lungs are fairly often revealed by radiography in Cape Town, and the possibility of their connexion with histoplasmosis (*Histoplasma capsulatum*) [I, No. 1927] was investigated by skin-testing with histoplasmin. Among 453 hospital patients there were only three positive reactors, males aged 18, 29, and 40 years, all from the Transkei district. There were no positive reactors to blastomycin among the 279 persons tested.

89. BENTINCK-SMITH (J.), KENNEDY (P.), & SAUNDERS (L. Z.). **Histoplasmosis in a Dog.**—*Cornell Vet.*, 42, 1, pp. 61-66, 1952.

Following the necropsy at the New York State Veterinary College, Ithaca, on a five-year-old female cocker spaniel, *Histoplasma capsulatum* [I, No. 2283] was isolated from the liver, spleen, and mesenteric lymph node on horse blood agar at 37° C.

90. ROBINSON (V. B.) & McVICKAR (D. L.). **Pathology of spontaneous canine histoplasmosis [*H. capsulatum*]. A study of twenty-one cases.**—*Amer. J. vet. Res.*, 13, pp. 214-219, 1952. [*V.B.*, 23, No. 381.]

The symptoms of *H[istoplasma] capsulatum* infection observed in dogs [see preceding entry] included chronic cough, irregular appetite, intermittent diarrhoea, gradual loss of weight, spreading of the posterior ribs and distension of the abdomen, increased temperature, some anaemia and icterus, and emaciation. Death ensued in five to nine weeks. Post-mortem examinations of 11 out of 21 cases revealed a disseminated proliferation of macrophages, many parasitized by the fungus, sometimes with necrosis and fibrosis. Lesions were observed in the lungs, thoracic and abdominal lymph nodes, and small intestine. The lungs were partly collapsed, with focal consolidations sometimes resembling metastatic tumours, and cavitation was present. The lymph nodes were enlarged, with some necrosis and connective tissue proliferation. The wall of the small intestine was unevenly thickened, and plaque-like areas, some ulcerated, were occasionally present. Other lesions included thickening of the mesentery and omentum, patchy involvement of the liver, enlarged peripheral lymph nodes, spleen, and tonsils, and parasitized macrophages in the bone marrow, adrenal glands, kidneys, and testes. Five of 13 hearts examined showed single, circumscribed degenerated areas in the right ventricular wall. In three animals calcified material was present under the endocardium of both auricles, and a similar lesion was found in the ascending aorta of one.

91. DROUHET (E.) & SEGRETAIN (G.). **Histoplasmose expérimental chez le Hamster doré.** [Experimental histoplasmosis in the Golden Hamster.]—*Ann. Inst. Pasteur*, 83, 3, pp. 381-383, 1 pl., 1952.

Three golden hamsters (*Mesocricetus auratus*) inoculated intraperitoneally with a suspension of the yeast phase of *Histoplasma capsulatum* died between 36 and 39 days later. The necropsy revealed massive proliferation of the cells of the reticulo-endothelial system, which was apparently invaded by way of the blood stream.

92. SPAÏS (A.). [I. Epizootic lymphangitis. II. Epizootic lymphangitis in Greece.]—*Delt. Hellen. kten. Hetair.*, 2, pp. 152–160, 1951; [3], pp. 31–37, 1952. [French summary. *V.B.*, 23, Nos. 379, 380.]

Details are given of the treatment of 32 cases in horses and mules of epizootic lymphangitis [*Histoplasma farciminosum*: 1, Nos. 1815, 2257, *et passim*], which was reintroduced into Greece after the late war by mules from Italy. The slaughter of infected animals is recommended.

93. MACKINNON (J. E.). Características de cuatro cultivos de *Madurella mycetomi* (Laveran) Brumpt aislados en el Sudán y en la Somalia británica. [Characteristics of four cultures of *Madurella mycetomi* (Laveran) Brumpt isolated in the Sudan and British Somaliland.]—*An. Fac. Med. Montevideo*, 36, 4, pp. 197–210, 4 figs., 1951. [English summary.]

From a comparative study of four cultures of *Madurella mycetomi* (three from the Sudan and one from British Somaliland) and a re-examination of *M. americana* and *M. ikedae* [1, No. 1727] the author concludes that all are identical and should be designated *M. mycetomi*, an amplified description of which is given.

94. MACKINNON (J. E.). Los agentes de maduromicosis de los géneros *Monosporium*, *Allescheria*, *Cephalosporium* y otros de dudosa identidad. [The agents of maduromycosis of the genera *Monosporium*, *Allescheria*, *Cephalosporium*, and others of doubtful identity.]—*An. Fac. Med. Montevideo*, 36, 4, pp. 153–180, 2 pl., 1951. [English summary.]

The following are some of the conclusions drawn from this important study on the fungi isolated from 17 cases of white maduromycosis and one case each of paramycetoma and black maduromycosis [1, No. 172]. *Allescheria boydii* [1, Nos. 1728, 2487] cannot be regarded as the perfect state of *Monosporium apiospermum*, since the conidia of the former species are exclusively of the *Cephalosporium* type. The biological properties of *A. boydii* are also different, maltose being utilized but not potassium nitrate, ammonium sulphate, urea, or asparagine, and the optimum temperature for growth is below 30° C.

*Acremoniella lutzi* [1, No. 343] is relegated to synonymy with *M. apiospermum* on the basis of identity in morphological and biological characters. *Pseudallescheria sheari* [1, No. 526] is also deemed to be a synonym of *M. apiospermum*; *Cephalosporium Recifei* [1, No. 343] and *C. falciformis* are considered to be valid species, but *C. granulomatis* [1, Nos. 778, 780] differs from *C. acremonium* [1, No. 359] only in its pink pigmentation, which is insufficient to entitle it to specific rank. Certain similarities were observed between the granules of *Indiella mansonii* and *M. apiospermum* on the one hand, and between those of *I. reynieri* [1, No. 200] and *C. falciformis* on the other.

95. Malfatti (M. G.) & Zapater (R. C.). Aplicación de la óptica electrónica al estudio del género *Candida*. [Application of the electron microscope to the study of the genus *Candida*.]—*Sem. méd.*, B. Aires, 100, 7, pp. 205–214, 26 figs., 1952. [English summary.]

The authors describe the morphological characters of *Candida albicans*, *C. tropicalis*, *C. pseudotropicalis*, *C. krusei*, *C. parakrusei*, and *C. stellatoidea* as revealed by the electron microscope.

96. Gordon (M. A.), Bradley (Eleanor G.), & Grant (Virginia Q.). The influence of different types of corn meal agar upon chlamydospore production by *Candida albicans*.—*J. Lab. clin. Med.*, 40, 2, pp. 182–187, 1952.

Four types of maize meal agar were tested with 145 strains of *Candida albicans* for their suitability as stimulants to chlamydospore production for the purpose of rapid identification. Yellow enriched (containing vitamins



B1 and B2, niacin, and iron) and unenriched, both home-made, were found to be about equally effective and superior to home-made white and Difco special. The two former also gave rise to larger quantities of mycelium than the two latter.

97. RANQUE (J.) & DEPIEDS (R.). **Modifications de propriétés biochimiques des souches de *Candida albicans* au cours de leur vieillissement, leurs rapports avec les transformations en formes 'rough'.** [Modifications in the biochemical properties of strains of *Candida albicans* in the course of ageing; their relations with conversion into 'rough' forms.]—*C. R. Soc. Biol., Paris*, 146, 5–6, pp. 479–481, 1952.

Of 68 strains of *Candida albicans* isolated in 1947 and 1948, 14 underwent transformation from the smooth to the rough type in pure culture at the Institute of Tropical Medicine, Marseilles (ten on 6 per cent. Sabouraud's glucose agar and four subcultured on a conservation medium) [I, Nos. 750, 1208]; of these, six partially resumed the smooth character. The process was accompanied by important and apparently definitive biochemical modifications; for instance, none of the 14 dissociating strains fermented galactose and four did not utilize maltose, while three assimilated glucose exclusively. Moreover, the application of the auxanographic method revealed a considerable diminution in the utilization of asparagine and urea.

A practical conclusion arising from these results is the inadvisability of using rough strains of *C. albicans* for purposes of identification, which should preferably be attended to not later than a month from the time of isolation.

98. KLIGMAN (A. M.). **Are fungus infections increasing as a result of antibiotic therapy?**—*J. Amer. med. Ass.*, 149, 11, pp. 979–983, 1952.

An increasing incidence of moniliasis (*Candida albicans*) has been recorded in association with the administration of the wide-spectrum antibiotics, such as aureomycin, terramycin, and chloramphenicol [see next entry]. For inclusion in New and Nonofficial Remedies, the Council on Pharmacy and Chemistry of the American Medical Association requires that these drugs bear a label warning users of this risk. *C. albicans* regularly emerges in profusion in the mouths and gastro-intestinal tracts of persons subjected to this mode of therapy, but its isolation in the presence of some untoward side reaction, e.g., glossitis or stomatitis, is not tantamount to a diagnosis of moniliasis.

The wide-spectrum antibiotics have not been found to enhance the growth of *C. albicans* *in vitro* or potentiate infection in animals with experimental moniliasis, blastomycosis [*Blastomyces dermatitidis*], histoplasmosis [*Histoplasma capsulatum*], coccidioidomycosis [*Coccidioides immitis*], and sporotrichosis [*Sporotrichum schenckii*].

The problem of fungal superinfection is discussed in relation to the general question of microbial resistance to antibiotics.

99. VANBREUSEGHEM (R.), BALSACQ (J.), & BERTRAND. **Moniliase généralisée par *Candida albicans* chez un enfant indigène au Congo belge après un traitement par les antibiotiques.** [Generalized moniliasis due to *Candida albicans* in a native infant of the Belgian Congo after antibiotic therapy.]—*Ann. Soc. belge Méd. trop.*, 32, 5, pp. 513–519, 1952. [Flemish summary.]

*Candida albicans* was isolated from the kidneys of a six-month-old male infant who succumbed to generalized moniliasis at Jabotville, Belgian Congo, following a course of antibiotic therapy for diarrhoea [I, Nos. 2291–2293; 2, No. 98].

100. LEVI (PAOLA). **Ricerche sull' azione degli antibiotici verso i funghi patogeni. Nota I.—Introduzione ed indagini sperimentali sul comportamento della *Candida albicans* nei confronti della penicillina. Nota II.—Indagini sperimentali**

sul comportamento della *Candida albicans* e di alcuni dermatomiceti nei confronti della streptomycin. **Nota III.**—Indagini sperimentali sul comportamento di alcuni miceti nei confronti della associazione tirotricino-joduro de potassio. [Studies on the action of some antibiotics on pathogenic fungi. Note I.—Introduction and experimental investigations on the reaction of *Candida albicans* to penicillin. Note II.—Experimental investigations on the reaction of *Candida albicans* and some dermatomycetes to streptomycin. Note III.—Experimental investigations on the reaction of some fungi to the combination of tyrothricin and potassium iodide.]—*Boll. Ist. sieroter. Milano*, 30, 3-4, pp. 168-175; 11-12, pp. 674-688, 1951. [English summaries.]

Following a cursory review of the literature on the action of the best known antibiotics on pathogenic fungi, the writer describes experiments at the Institute of Hygiene, University of Modena, to determine the effect of penicillin on *Candida albicans*. The antibiotic exerted no influence on the fungus in *in vivo* tests on rabbits and only a slight fungistatic effect *in vitro*.

The addition of streptomycin to cultures of *C. albicans*, *Trichophyton mentagrophytes*, *Coccidioides immitis*, *Sporotrichum beurmanni* [*S. schencki*], and *Histoplasma capsulatum* did not stimulate their development, nor was the pathogenicity of the first-named to rabbits enhanced by the antibiotic.

Descriptive notes are given on 20 antibiotics of proved anti-fungal efficiency and a tabulated account is presented of experiments with a combination of tyrothricin and potassium iodide. The potency of the antibiotic towards *Histoplasma capsulatum*, *Coccidioides immitis*, *Actinomyces bovis*, *A. griseus*, *S. schencki*, *T. mentagrophytes*, and *Cryptococcus pararoseus* was enhanced on an average 20-fold by association with potassium iodide, which was itself inactive at the concentrations used.

101. VIRTANEN (I.). **Observations on the symbiosis of some fungi and bacteria.**—*Ann. Med. exp. biol. Fenn.*, 29, 3, pp. 352-358, 4 graphs, 1951.

In the writer's experiments at the Department of Serology and Bacteriology, University of Helsinki, Finland, *Staphylococcus aureus*, grown alone in Raulin's solution, died after four days, but remained viable for eight in the company of *Candida albicans* or *Torulopsis utilis* and for six in that of *C. tropicalis*. With *C. albicans* the bacterium was viable from pH 3 to 5, with *T. utilis* at pH 2 to 3, with *C. tropicalis* at pH 6, and alone not below pH 4.

Alone in the nutrient medium *S. albus* grew only for one day, but with *C. albicans* or *T. utilis* it remained viable for seven and with *C. tropicalis* for six days. By itself or with *C. tropicalis* the bacterium made no growth below pH 7, but with *C. albicans* it developed between 1.5 and 3 and with *T. utilis* from 1 to 3.

*Lactobacillus acidophilus* grew either alone or with the fungi for eight days. The lowest initial pH at which it developed alone was 5, rising to 7 by the end of the eight-day experimental period. With *C. albicans* and *C. tropicalis* the minimum for the whole time was 5 to 7, while with *T. utilis* the bacterium developed for six days at 1.5 to 3, followed by a sudden rise to between 4 and 6.5.

*Escherichia coli* remained viable throughout the experiment either alone or with *C. albicans*, but died after six days with *C. tropicalis* and after five with *T. utilis*. It made no growth alone below pH 5, but developed together with *C. albicans* or *T. utilis* at 1.5 to 3 and with *C. tropicalis* at 3.

102. CAPUTI (F.). **Mycotorula albicans come agglutinogeno e precipitogeno.** [*Mycotorula albicans* as agglutininogen and precipitinogen.]—*Boll. Soc. ital. Biol. sper.*, 27, 12, pp. 1598-1599, 1951.

At the Institute of Hygiene and Microbiology, University of Bari, Italy,



two guinea-pigs subcutaneously injected with a moderately dense suspension of *Mycotorula* [*Candida*] *albicans* in physiological saline reacted by serum agglutination at titres of 1 in 200 and 1 in 400, respectively. A precipitation test with the serum from the second animal on the filtrates of an old broth culture also gave positive results.

103. CAPUTI (F.). **Dissociazione microbica da lisozima (saggi sulla *Mycotorula albicans*).** [Microbial dissociation by lysozyme (assays on *Mycotorula albicans*).]—*G. Batt. Immun.*, 44, 5-6, pp. 190-194, 1 fig., 1952. [French, English, and German summaries.]

At the Institute of Hygiene and Microbiology, University of Bari, the author performed experiments to study the function of lysozyme (undiluted white of egg) as a dissociating biological factor, using *Mycotorula* [*Candida*] *albicans* as the test organism. Judging by the reaction to tryptoflavin and the appearance of the colonies on agar and in broth cultures, dissociation is expressed by the development of the R phase [1, No. 1208] and a retardation of mycelial growth.

104. CAPUTI (F.). ***Mycotorula albicans* come antagonista della penicillina e della streptomicina.** [*Mycotorula albicans* as antagonist of penicillin and streptomycin.]—*Boll. Ist. sieroter. Milano*, 31, 7-8, pp. 315-317, 1 fig., 1952. [English summary.]

When *Mycotorula* [*Candida*] *albicans* was cultured for 20 days at 37° C. in bouillon with the addition of 100 Oxford units of penicillin or 5 mg. streptomycin per 10 ml., the anti-bacterial activity of the medium was substantially reduced in comparison with a control containing the same amounts of the antibiotics and maintained under comparable conditions.

105. TOMIĆ-KAROVIĆ (K.) & POPADIĆ (V.). **Mittelohrentzündungen, verursacht durch *Candida albicans*.** [Otitis media caused by *Candida albicans*.]—*Schweiz. med. Wschr.*, 83, 3, pp. 59-61, 1953.

Following a description of the morphological and biochemical characters of *Candida albicans* and of the four clinical manifestations of the fungus, severally involving the mucous membranes, bronchopulmonary system, skin, and gastro-intestinal tract, the authors report from Zagreb, Yugoslavia, two cases of otitis media, one in a 49-year-old farmer and the other in an eight-year-old girl. Surgical intervention was necessary in the former case but in the latter a cure was effected by topical applications of 3 per cent. boric acid. These are believed to be the first records of moniliasis involving the middle ear.

106. VACCARO (H.) & FERRADA URZUA (L.). **Estudio micológico de 550 secreciones vaginales de mujeres no embarazadas.** [Mycological study of 550 vaginal secretions from non-pregnant women.]—*An. Fac. Med. Montevideo*, 37, 5-6, pp. 147-150, 1952. [English summary.]

At the Institute of Microbiology and Immunology of the University of Chile, yeast-like fungi could be detected by direct examination in 11 out of 550 vaginal secretions from non-pregnant women (2 per cent.). Of the 88 strains of *Candida* isolated from 16 per cent. of the specimens, 86 were identified as *albicans* [1, Nos. 2299, 2300] and two as *C. tropicalis*. The pathogenicity to guinea-pigs of the former species was of a high grade and that of the latter of a low order. Eight non-pathogenic strains of *Rhodotorula* and two of *Saccharomyces* were also isolated from the samples.

107. BARLAS (O.) & AKYEL (M.). **A case of pulmonary moniliasis.**—*Brit. med. J.*, 1952, 4799, pp. 1394-1396, 4 figs., 1952.

A case of pulmonary moniliasis (*Candida albicans*) in a 58-year-old male patient is reported from the First Medical Clinic of the Faculty of Medicine,

Istanbul University, Turkey. Unusual features of the illness were the cavitory lesions disclosed by X-ray examination and the rapid response to antibiotic therapy with penicillin and aureomycin.

108. LE BLOND (W.). **Endomyces albicans (muguet) dans une collection purulente sous-cutanée.** [*Endomyces albicans* (thrush) in a subcutaneous accumulation of pus.]—*Un. méd. Can.*, 81, 2, pp. 147–148, 1952.

At the Hôpital de l'Enfant-Jésus, Quebec, *Candida albicans* was isolated from the pus of a subcutaneous abscess on the left thigh of a female infant. The lesion cleared up spontaneously in about six weeks.

109. PAPPENFORT (R. B.) & SCHNALL (EDITH S.). **Moniliasis in patients treated with aureomycin. Clinical and laboratory evidence that aureomycin stimulates the growth of *Candida albicans*.**—*Arch. intern. Med.*, 88, pp. 729–735, 1951.

A significant number of patients treated for dermatological disease at the Columbia-Presbyterian Medical Center, Chicago, with different lots of aureomycin hydrochloride prepared for oral administration developed moniliasis, and *in vitro* tests by the diffusion-plate method demonstrated that the drug in 250 mgm. capsules for oral administration stimulated the growth of *Candida albicans*, *Cryptococcus neoformans*, and *Saccharomyces cerevisiae*. The aureomycin hydrochloride preparations for parenteral injection did not display the growth-stimulating effect on *C. albicans*, and it would appear that the substance causing growth stimulation in the three species of fungi is not the same as the antibiotic factor. The possibility exists that the *in vitro* stimulation of *C. albicans* and other organisms by the oral preparation of aureomycin hydrochloride may also occur *in vivo* in patients treated with this antibiotic.

110. FLOCH (H.). **'Moniliase' broncho-pulmonaire en Guyane française.** [Broncho-pulmonary 'moniliasis' in French Guinea.]—*Bull. Soc. Path. exot.*, 45, 5, pp. 620–626, 1952.

Clinical observations are presented on two cases of broncho-pulmonary 'moniliasis' in French Guinea caused by *Candida tropicalis*. One proved fatal, but the other patient recovered following a course of potassium iodide therapy by intravenous injections. The author has published two previous records of the disease in the Colony (*Publ. Inst. Pasteur Guyane* 69, 1943, and 248, 1951).

111. BRYGOO (E.-R.). **Étude de 44 souches de *Candida* isolées à Saigon par bilicuture.** [Study of 44 strains of *Candida* isolated at Saigon by bilicuture.]—*Ann. Inst. Pasteur*, 83, 6, pp. 816–818, 1952.

Of 220 specimens of bile examined by Langeron's technique (*Précis de mycologie*, 1945) at the Institut Pasteur, Saigon, Indo-China, 44 (19.5 per cent.) yielded species of *Candida* [1, No. 2294 and next entry] distributed as follows: *C. albicans* 25, *C. robusta* and *C. pelliculosa* four each, *C. guilliermondi* five, and *C. macedoniensis*, *C. krusei*, *C. parapsilosis*, *C. catenulata*, *C. heveanensis*, and *C. zeylanoides* one each.

112. BRYGOO (E.-R.). **Étude de 66 souches de *Candida* isolées à Saigon de prélèvements pharyngiens.** [Study of 66 strains of *Candida* isolated at Saigon from pharyngeal swabs.]—*Ann. Inst. Pasteur*, 83, 6, pp. 818–820, 1952.

Over 30 per cent. of the 125 pharyngeal swabs examined at the Institut Pasteur, Saigon, Indo-China, yielded species of *Candida* [see preceding entry] in pure culture. Of the 66 isolates studied, 35 were identified as *C. albicans*, seven as *C. tropicalis*, three as *C. robusta*, two as *C. pelliculosa*, one each as *C. guilliermondi* and *C. macedoniensis*, two as *C. krusei*, four as *C. parapsilosis*, one as *C. catenulata*, six as *C. sp.*, two as *C. rugosa*, and one each as *C. zeylanoides* and *C. heveanensis*.



113. BRUN (R.), MOZER (J. J.), & JADASSOHN (W.). **L'effet de quelques substances anti-mycotiques sur *Candida albicans*.** [The effect of some anti-mycotic substances on *Candida albicans*.]—*Schweiz. med. Wschr.*, 83, 6, pp. 135–136, 1 fig., 1953.

Of seven anti-mycotic substances tested at the Dermatological Clinic of the University of Geneva for their action on *Candida albicans*, the most effective were oxyquinoline derivatives, notably dichloroxyquinoline, which inhibited growth at a concentration of 0.05 per cent.

114. WELD (JULIA T.). ***Candida albicans*. Rapid identification in pure cultures with carbon dioxide on modified eosin-methylene blue medium.**—*Arch. Derm. Syph.*, Chicago, 66, 6, pp. 691–694, 1 fig., 1952.

At the College of Physicians and Surgeons, Columbia University, New York, a method has been devised for the rapid identification of *Candida albicans* in pure culture on Levine eosin-methylene blue agar, supplemented by a solution containing 10 mg. per ml. crystalline aureomycin hydrochloride in the proportion of 1 ml. per 100 ml. agar. The plates are incubated in an atmosphere of approximately 10 per cent. carbon dioxide (concentrations ranging from 5 to 20 per cent. have given equally good results). The spidery or feathery mycelium of *C. albicans* is identifiable within 18 hours. Only one of the other seven species studied produced mycelium under comparable conditions, viz., *C. stellatoidea*, and its loose network of scattered spores (which developed in the same way without carbon dioxide) was quite distinct from the colonies of *C. albicans*.

115. STUART (P.). **An outbreak of bovine mastitis from which yeasts were isolated, and attempts to reproduce the conditions experimentally.**—*Vet. Rec.*, 63, 17, p. 314, 1951.

From the Ministry of Agriculture, Weybridge, Surrey, the author reports an outbreak of acute mastitis in 11 out of a dairy herd of 26 cows following infusion of the udders with penicillin. A species of *Candida* differing from *C. albicans* and other well-known species was isolated in pure culture. The condition was reproduced experimentally by the infusion of udders with mastitis secretions and egg embryo but not with glucose broth cultures.

116. HORTON-SMITH (C.) & LONG (P. L.). **The effect of penotrane on the growth in vitro of *Candida albicans* and *Aspergillus fumigatus*.**—*J. comp. Path. Ther.*, 62, 4, pp. 266–274, 2 figs., 1952.

The results of *in vitro* tests at the Poultry Research Station, Houghton, Huntingdon, demonstrated that penotrane (phenyl-mercuric-dinaphthyl-methane-disulphonate) is active against *Candida albicans* and *Aspergillus fumigatus* originating in turkeys and fowls [cf. 1, No. 2159] at a dilution of 1 in 320,000 and probably fungicidal towards the former species at 1 in 80,000.

117. BLAXLAND (J. D.). **The causes of epidemic outbreaks of moniliasis in Turkeys.**—*Off. Rep. World's Poult. Congr., Paris*, pp. 21–27, 1951. [V.B., 22, No. 3648.]

The author doubts whether *Candida albicans* is the primary cause of moniliasis in turkeys [see preceding entry], as the organism was prevalent in both normal and diseased poultry and the disease was reproduced experimentally [by means of *C. albicans*] only with difficulty.

118. PHAFF (H. J.), MRAK (E. M.), & WILLIAMS (O. B.). **Yeasts isolated from Shrimp.**—*Mycologia*, 44, 4, pp. 431–451, 1952.

Thirty-five cultures of yeasts isolated from shrimp (*Peneaus setiferus*) collected in the Gulf of Mexico included *Candida guilliermondi*, *C. parapsilosis*,

two new species of *Trichosporon*, *T. diddensii* and *T. lodderi*, and a new variety, *peneans*, of *T. cutaneum*.

119. NEGRONI (P.), BETTINOTTI (C.), & LANATA (C.). **Micosis bronchopulmonar por *Trichosporon cutaneum***. [Bronchopulmonary mycosis caused by *Trichosporon cutaneum*.]—*Rev. argent. Dermatosis*, 36, 4, pp. 236–241, 3 figs., 1952. [English summary.]

The first case of bronchopulmonary infection caused by *Trichosporon cutaneum* in Argentina is reported from the Instituto Bacteriológico 'Malbrán', Buenos Aires. The patient, a 42-year-old female from San Juan whose symptoms were suggestive of tuberculosis, responded rapidly to sulphonamide ('fontamida') and iodide therapy.

120. PEREIRO MIGUENS (M.). **Piedra blanca europea (primer caso descrito en España)**. [European white 'piedra' (first case described in Spain).]—Reprinted from *Act. dermosif., Madr.*, 1952, 6, 9 pp., 1 fig., 1952. [English summary.]

In connexion with the first report of white 'piedra' (*Trichosporon beigeli*) [1, No. 2364] from Spain, the literature on the subject is briefly reviewed, the taxonomy of the fungus discussed, and a description given of the clinical and mycological features of the case, which occurred in a 38-year-old male resident at Santiago de Compostela, who had never left the country.

121. PÄTIÄLÄ (R.) & RAUTAVAARA (T.). ***Isaria cretacea* van Beyma isolated from human nail in Finland**.—*Karstenia*, 1, pp. 83–84, 1 fig., 1950. [Received December, 1952.]

*Isaria cretacea* was isolated from the finger-nails of a male aged 57 living near Tampere, Finland. Soon after returning to Finland from China in 1929 the patient noted that the nail of the middle finger of the right hand did not adhere to the nail bed when growing. After two years other fingers of the right hand and the toes became affected simultaneously. The disease spread from the nails, in the form of a scaly enzema, to the feet, primarily all round the sole. This appears to be the first report of *I. cretacea* from a northern country. Further work is in progress.

122. VOLTA (W.). **Die antimykotische Wirkung des Vitamins K5 in vitro**. [The anti-mycotic effect of vitamin K5 *in vitro*.]—*Z. Haut- u. Geschl. Krankh.*, 14, 5, pp. 137–143, 5 figs., 1953.

At concentrations of 0.05 and 0.1 per cent., vitamin K5 totally inhibited the growth of 14 dermatophytes and reduced to a minimum (colonies up to 1 cm. in diameter) that of *Candida albicans*, *C. tropicalis*, *Rhodotorula* sp., and *Oidium* [*Oospora*] *lactis* in Grütz's agar at the Skin Clinic of the General Hospital St. Georg, Hamburg [cf. 1, No. 1781]. An even more powerful effect was exerted by acetylated vitamin K5, which was fungistatic at 0.05 per cent. to all the species tested except *C. albicans* and *R.* sp., the colonies of which did not exceed the size of a pin's head.

123. BRUNE (E.). **Rezidivfreie Heilung einer Pityriasis versicolor**. [Cure without relapse of a pityriasis versicolor.]—*Derm. Wschr.*, 126, 37, pp. 883–884, 1952.

For 17 years the author suffered from pityriasis versicolor [*Malassezia furfur*], which was effectively cured in 8 to 12 days by topical applications of phebrocon-serol, containing as active principles dioxyphenylhexane and chloromethylisopropylphenol.

124. VANBREUSEGHEM (R.) & DE TIEGE (R.). **Contribution a l'étude du pityriasis versicolor et de *Pityrosporum ovale***. [Contribution to the study of pityriasis versicolor and *Pityrosporum ovale*.]—*Ann. Soc. belge Méd. trop.*, 32, 5, pp. 520–527, 1952. [Flemish summary.]

On Sabouraud's glucose agar overlaid with sterile olive oil the authors



isolated 30 strains of *Pityrosporum ovale* from 62 natives of the Belgian Congo suffering from pityriasis versicolor, thereby casting some doubt on Gordon's theory as to the implication of *P. orbiculare* [1, No. 2366] in the etiology of the complaint.

125. BORY (R.), GUYOTJEANNIN (C.), & LUTERAAN (P.-J.). **Sur une mycose de la peau glabre à *Aleurisma lugdunense* Vuill. 1924.** [On a mycosis of the glabrous skin due to *Aleurisma lugdunense* Vuill. 1924.]—*Rev. Biol. gén.*, 1, 1, pp. 1-2 (plus 2 pp. unnumbered), 1 col. pl., 1951. [Mimeographed.]

*Aleurisma lugdunense* was isolated from pruriginous patches on the palms of the hands and wrists of a 52-year-old female patient in France in 1951. The attack occurred in 1927 in Morocco.

126. JANKE (D.). **Scopulariopsisarten als menschenpathogene Dermatophyten.** [*Scopulariopsis* species as dermatophytes pathogenic to Man.]—*Z. Haut- u. Geschl.Krankh.*, 14, 2, pp. 35-40, 3 pl., 2 figs., 1953.

Ten cases of *Scopulariopsis* infection are reported in patients at the Skin Clinic of Marburg University, Germany. *S. fuca* was the agent in two cases of prostatitis accompanied by chronic dermatological symptoms, and *S. brevicaulis* in a superficial erythema of the forearm, extending three months later to the posterior, in a 12-year-old boy. Eleven other records from the literature are briefly noted.

127. STOCKDALE (PHYLLIS M.). **Nutritional requirements of the dermatophytes.**—*Biol. Rev.*, 28, 1, pp. 84-104, 1953.

Contributions to the relevant literature, listed in a four-page bibliography, were consulted in the preparation of this survey of the available information on the nutritional requirements of the dermatophytes.

128. PECK (S. M.). **Fungus infections and their treatment.**—*Med. Ann. D.C.*, 21, 1, pp. 1-10, 1952.

This address, delivered before the 22nd Annual Scientific Assembly of the Medical Society of the District of Columbia, comprises up-to-date information, based on 14 contributions to the relevant literature, on the following aspects of dermatophytosis: incidence (in the United States), allergic manifestations due to fungi, pathogenesis of trichophytids, types of trichophytids, relationship between fungus infections and penicillin sensitivity, and treatment of fungus infections.

129. JANKE (R. G.). **Studien über die kulturelle Erfassung der Hautpilze.** [Studies on the cultural demonstration of dermatophytes.]—*Zbl. Bakt.*, Abt. 1, 58, 7-8, pp. 545-548, 4 figs., 1952.

At the University Dermatological Clinic, Vienna, a modified adhesion culture on semi-solid substrata, e.g., wort agar (0.8 per cent.) plus 5 international units of penicillin and 20 units of streptomycin per ml. or Littman's medium [1, No. 1288], has given good results in the isolation of dermatophytes, including *Candida albicans* and *Trichophyton gypsum*.

130. PÄTIÄLÄ (R.) & HÄRÖ (S.). **Review of fungi found on the skin on the basis of the 1948 material.**—*Karstenia*, 1, pp. 48-59, 5 figs., 1950. [Received December, 1952.]

In a study on the occurrence of dermatophytes in Finland specimens were examined from the Parasitological Department of the University of Helsinki, collected in 1947-8, chiefly from the southern part of the country, together with material obtained from the garrisons of Hyrlä and Rühimäki, where recruits came from all parts. In 227 dermatological cases the most prevalent fungus was *Trichophyton gypsum* [*T. mentagrophytes*], which occurred with

and without clinical symptoms. During 1948 there were only a few isolated cases of *T. violaceum*, *Achorion* [*Microsporum*] *gypseum* [I, No. 1456], *A. galinae* [I, No. 2365] (isolated from *Tetrao tetrix*), and *Epidermophyton inguinale* [*E. floccosum*]. Abundant fungi were found in nails of the fingers and toes, which in several cases seemed to remain infective over the winter. *T. interdigitale* [I, No. 1455] was found in 3.4 per cent. of asymptomatic cases and in 84 per cent. of those with clinical symptoms, and must be regarded as pathogenic.

Other fungi found on the skin included pathogenic yeast-like fungi (such as *Candida* and *Torula*). Deep clinical changes were occasionally produced by *C. albicans* [I, No. 2152] and *C. tropicalis*. In mass examinations fungi of this group were frequently found in the absence of clinical manifestations.

131. FISCHER (J. B.). **Fungous infections of the skin, hair and nails.**—*Canad. med. Ass. J.*, 67, 5, pp. 398–403, 1952.

Since the establishment in 1947 of the mycological section of the Central Laboratory of the Ontario Department of Health, Toronto, 5,489 specimens of skin, hair, and nails have been investigated, of which 1,030 (18.7 per cent.) were positive for fungi. The most prevalent species were *Microsporum audouinii* (263), *Trichophyton mentagrophytes* (253), and *T. rubrum* (214), while among others represented were *Candida albicans* (76), *M. canis* (66), *Epidermophyton floccosum* (50), *Nocardia minutissima* [I, Nos. 1322, 1462, 1465, 1489] and *Malassezia furfur* (21 each), *T. faviforme* (20), and *N. tenuis* [I, Nos. 1462, 2242] (9).

132. PEREIRO MIGUENS (M.). **Un caso de favus primitivo de la piel lampiña en una Mujer adulta.** [A case of primary favus of the glabrous skin in an adult Woman.]—Reprinted from *Act. dermo-sif., Madr.*, 1951, 2, 6, pp., 1951. [English summary.]

Clinical and mycological details are given of a case of primary animal favus (*Microsporum* [*Trichophyton*] *quinckeanum*) affecting the forehead of a 50-year-old woman resident at Santiago de Compostela, Spain. Numerous 'godets' were a characteristic feature of the lesion.

133. DOWDING (E[LEANOR] S.). **Further studies of the mosaic fungus.**—*Arch. Derm. Syph., Chicago*, 66, 4, pp. 470–477, 3 figs., 1952.

Evidence is adduced from the author's studies at the Provincial Laboratory of Public Health, Edmonton, Alberta, to demonstrate that the much discussed mosaic fungus is neither cholesterol, a living fungus, an artefact of the mounting medium, nor a product of the epidermal cells, but in all probability a fungus product. Close scrutiny of the skin containing mosaic fungus sometimes reveals faint traces of the persistent cell walls of disorganized hyphae. The hyphae and spores of *Trichophyton mentagrophytes* growing in the skin may produce extracellular deposits resembling the mosaic fungus, which is interpreted as arising in this way. The reticulate pattern of the mosaic fungus in potassium hydroxide preparations and its position on a focal plane superior to that of the epidermal cells are attributed to the upward carriage of the mosaic segments by capillary forces towards the cover-slip. Drifting upwards, the segments assume the reticulate shape of the epidermal cells round which they pass.

134. JILLSON (O. F.) & HOEKELMAN (R. A.). **Further amplification of the concept of dermatophytid. 1. Erythema annulare centrifugum as a dermatophytid.**—*Arch. Derm. Syph., Chicago*, 66, 6, pp. 738–745, 5 figs., 1952.

Five cases of erythema annulare centrifugum are reported from the Dart-



mouth Medical School, New Hampshire, which fulfilled the minimal criteria for the diagnosis of dermatophytid. In two the complaint was reproduced and eliminated by the experimental production and eradication of *tinea pedis* (*Trichophyton mentagrophytes*).

135. NEUHAUS (H.). **Behandlung der Dermatomykosen mit Fettsäureestern.** [Treatment of dermatomycoses with fatty acid esters.]—*Med. Klin.*, 47, 39, pp. 1288–1289, 1952.

From Wuppertal-Elberfeld, Germany, the author reports encouraging results in small-scale *in vivo* experiments in the therapy of dermatomycoses, including *Epidermophyton* Kaufmann-Wolf [*Trichophyton interdigitale*], *E. [T.] rubrum*, and *T. gypseum*, with a fatty acid ester preparation obtainable commercially under the name of 'antisporon' (J. Ellendorff & Co., Wuppertal-Barmen).

136. SHARVILL (D.). ***Tinea imbricata* in a European : double infection with *Trichophyton concentricum* and *Trichophyton rubrum*.**—*Brit. J. Derm.*, 64, 10, pp. 373–377, 2 figs., 1952.

Scrapings from the same lesions on the body of a 23-year-old European officer in the Malayan Police yielded both *Trichophyton concentricum* and *T. rubrum* [see next entry]. The cultural and morphological characters of a strain of the former species isolated in a tube of dextrose broth and grown on Sabouraud's glucose agar at 22° C. are described. An improvement in the patient's condition was effected by two daily applications of (1) Whitfield's ointment and (2) a lotion consisting of 3 gm. salicylic acid, 0.5 gm. copper nitrate, 25 ml. acetone, and methylated spirit to 100 ml.

137. POLUNIN (I.). ***Tinea imbricata* in Malaya.**—*Brit. J. Derm.*, 64, 10, pp. 378–384, 7 figs., 1952.

In connexion with the report of *tinea imbricata* (*Trichophyton concentricum* and *T. rubrum*) in a European [see preceding entry], the author describes and discusses the complaint as it occurs in Malaya under the aspects of racial, age, and sex incidence and nature and distribution of the lesions. It is common in each of the three main types of Malayan aborigines, comprising about 1 per cent. of the population, and is widely distributed throughout the Peninsula. Of the 581 aborigines of both sexes and all ages examined in the course of a disease survey, 53 (9.1 per cent.) were suffering from *tinea imbricata*, which is extremely rare among other races; in fact, the writer has observed only one case in a non-aboriginal during his three years' experience in Malaya. Neither sex and no age group was particularly susceptible.

138. VANBREUSEGHEM (R.), PEETERS (P.), & TRITSMANS (E.). **Note préliminaire sur l'athlete's foot chez des sportifs belges.** [Preliminary note on athlete's foot among Belgian sportsmen.]—*Arch. belg. Derm.*, 3, 3, pp. 343–349, 1952. [Flemish and English summaries.]

Of 152 swimmers and 155 gymnasts examined at the Institute of Tropical Medicine, Antwerp, 61 (40 per cent.) of the former and 38 (24.5) of the latter were found to be suffering from athlete's foot, associated in 25 cases with *Trichophyton rubrum*, in 17 with *Ctenomyces interdigitalis* [*T. interdigitale*], and in one with *Epidermophyton floccosum*. The incidence of the complaint among swimmers increased with the duration and frequency of the practice.

139. VANBREUSEGHEM (R.). **Les dermatophytes du Congo belge.** [The dermatophytes of the Belgian Congo.]—*Congr. int. Pat. comp.*, 1952, pp. 141–144, 1952.

The author divides the dermatophytes into four genera: *Ctenomyces*, corresponding to Sabouraud's microid species of *Trichophyton* and Emmons's

*T. mentagrophytes*; *Sabouraudites*, corresponding to Emmons's *Microsporum* and, roughly, to Sabouraud's *Microsporum*; *Trichophyton*, corresponding to Sabouraud's *Trichophyton*, excluding the microid species, and to Emmons's *Trichophyton*, apart from *T. mentagrophytes*; and *Langeronia*, which includes *T. soudanense*. No species of *Ctenomyces* has yet been isolated in the Belgian Congo. *S. gypseus* is world-wide, but the only other three species, *S. duboisi* [I, No. 2541], *S. langeroni* [I, No. 1996], and *S. rivalieri* [I, No. 2546], have not so far been found in the Belgian Congo. Six species of *Trichophyton* cause ringworm in the Belgian Congo: *T. ferrugineum* [I, No. 1487], *T. violaceum*, *T. glabrum*, *T. rodhaini* [I, No. 1486], *T. rubrum*, and *T. album*. *Epidermophyton* contains only one species, *E. floccosum*, which the author has isolated in 0.5 per cent. of cases of tinea capitis among natives. *L. soudanensis* (the only existing species of *Langeronia* [I, No. 1997]) appears to be confined to central Africa, and has been isolated occasionally in the Belgian Congo.

140. BOEDIJN (K. B.). **Notes on the Trichophytoneae from Java.**—*Mycopathologia*, 6, 2, pp. 116–134, 7 pl., 1951.

The author surveys briefly the taxonomy of the *Trichophytoneae* which he divides into six genera: *Microsporum*, characterized by thick-walled, asperulate closterospores; *Epidermophyton* by thin-walled, smooth closterospores without aleuriospores; *Ectotrichophyton* by small, thin-walled, smooth closterospores, with aleuriospores and spiral hyphae present; *Sabouraudiella* with large, thick-walled, smooth closterospores with aleuriospores but without spiral hyphae; *Trichophyton* without closterospores but with aleuriospores and chlamydospores; and *Achorion* with only chlamydospores. Full technical descriptions are given of *M. audouini*, *Ectotrichophyton* [*T.*] *mentagrophytes*, *S. purpurea* [*T. purpureum*], *S. rubra* [*T. rubrum*], *S. interdigitalis* [*T. interdigitale*], *Epidermophyton floccosum*, *E. angustisporum*, *T. tonsurans*, *A. schoenleini*, *A. ochraceum*, and *A. decipiens*, all isolated from human beings in Java.

141. BOUILLENNE (R.) & BOUILLENNE-WALRAND (M.). **Action de certaines phytohormones d'application sur la croissance de champignons inférieurs: Trichophyton div. sp., Staphylococcus aureus, Sarcina lutea, Pseudomonas aeruginosa.** [Action of certain synthetic plant hormones on the growth of lower fungi: *Trichophyton* diverse species, *Staphylococcus aureus*, *Sarcina lutea*, *Pseudomonas aeruginosa*.]—*Bull. Acad. roy. Belg.*, Sér. 5, 37, 7, pp. 567–582, 3 figs., 1951.

In experiments at the Botanical Institute, University of Liège, Belgium, the growth of *Trichophyton schoenleini* was markedly inhibited by  $\beta$ -indolepropionic acid and 2,4-dichlorophenoxyacetic acid (2,4-D) at 200 mg. per cent.; that of *T. violaceum* by  $\beta$ -indoleacetic acid at 200 mg.,  $\beta$ -indolepropionic acid at 20 mg. and 2,4-D at 200 mg.; and that of *T. crateriforme* [*T. tonsurans*] by 200 mg.  $\beta$ -indolepropionic acid and 1 gm. 2,4-D.

142. BOUILLENNE (R.) & BOUILLENNE-WALRAND (M.). **Influence des impuretés contenues dans les hormones de synthèse (qualité technique) sur la croissance d'organismes végétaux inférieurs.** [Influence of the impurities contained in synthetic hormones (technical grade) on the growth of lower plant organisms.]—*Bull. Acad. roy. Belg.*, Sér. 5, 38, 8–9, pp. 787–815, 4 pl., 1 graph, 1952.

At a dilution of 1 in 20,000 a contaminant isolates from the sodium salts of a herbicide, 2:4:5-trichlorophenoxyacetic acid, totally inhibited the growth of 17 micro-organisms, including *Trichophyton* spp. [cf. preceding entry], *Microsporum audouini*, *M. felineum* [*M. canis*], *Sporotrichum schencki*, *Nocardia africana*, *N. asteroides*, and *Candida albicans*, in pure culture at pH



4.9 and 6.9. At 1 in 45,000 its action was selective, certain species, e.g., *C. albicans* and *T. gypsum asteroides* [*T. mentagrophytes*], being more resistant than others.

143. SZYMONA (M.). **Effect of the phytoncides of *Allium sativum* on the growth and respiration of some pathogenic fungi.**—*Acta Microbiol. Polon.*, 1, 1, pp. 5–23, 1952. [Polish, with English summary. Abs. in *Chem. Abstr.*, 47, 5, p. 2412, 1953.]

In experiments at the Academy of Medicine, Lublin, the growth and respiration of *Candida albicans*, *Trichophyton cerebriforme* [*T. flavum*], and *T. granulosum* were inhibited by garlic juice. This effect was counteracted by cysteine and BAL [British antilewisite = 2,3-dimercapto-1 propanol] but not by methionine. Urease and succinic hydrogenase proved highly sensitive to the phytoncides, the anti-fungal activity of which is attributed to the inhibition of succinic hydrogenase via the inactivation of thiol groups.

144. CHABÁS LÓPEZ (J.). **Los progresos de la quimioterapia antimicótica.** [The advances of anti-mycotic chemotherapy.]—*Clin. y Lab.*, 52, 306, pp. 179–196, 1 graph, 1951.

Excellent results were obtained in *in vitro* and *in vivo* experiments at Barcelona, Spain, with 2,2'-dioxo-5,5'-dichlorodiphenyl sulphate (D 25-novex), which was fungistatic, e.g., to *Microsporum audouini*, *Epidermophyton* [*Trichophyton*] *interdigitale*, one isolate of *T. gypsum asteroides* [*T. mentagrophytes*], and *T. granulosum* at a concentration of 1 in 2,560,000, and was very effective for topical or internal use in clinical trials.

145. DÓSA (A.). **Die Wirkung des Penicillins auf Kolonien von häufig krankheits-erregenden Dermatophyten.** [The effect of penicillin on colonies of common pathogenic dermatophytes.]—*Derm. Wschr.*, 125, 15, pp. 337–341, 1952.

In *in vitro* experiments at the Institute of Forensic Medicine, University of Szeged, Hungary, solutions of two brands of penicillin in units of 60:500,000 60:1,000,000, and 60:5,000,000 failed to suppress the growth of virulent strains of some common dermatophytes pathogenic to man in pure culture on malt agar. At concentrations of 60:10,000,000 and 60:100,000,000 growth was temporarily inhibited, but after two to three weeks it was fully equal to that of the untreated controls. The order of resistance to the drug was as follows: (1) yeasts (which were totally unaffected), (2) *Trichophyton gypsum*, (3) *Epidermophyton* Kaufmann-Wolf [*T. interdigitale*], (4) *Nocardia bovis* [*Actinomyces israeli*], *Microsporum audouini*, and *Achorion gruby-schoenleini* [*T. schoenleini*]. The effect of penicillin, like that of raphanin [1, No. 1793], depends on the reproduction or growth rate of the fungi, which in turn is closely correlated with the oxidation process.

146. VANBREUSEGHEM (R.). **Le cycle biologique des dermatophytes.** [The biological cycle of the dermatophytes.]—*Congr. int. Pat. comp.*, 1952, pp. 135–140, 1952.

In collaboration with VAN BRUSSEL the author cultured dermatophytes not only in media to which 20 per cent. of garden soil rich in humus had been added [1, Nos. 2543–2545], but also in sterilized soil alone. Dermatophytes grown on media containing soil go through a striking process of regeneration. It was next found that hairs, squamae, fur, and nails infected by dermatophytes can also be cultured on sterilized soil. The pathogenicity of cultures of dermatophytes grown on sterilized soil was proved, and appeared to be more marked than that of cultures grown on ordinary media. The author suggests that soil may be a normal reservoir for dermatophytes and give rise to epidemics of these organisms in some way not yet understood.



147. VANBREUSEGHEM (R.) & VAN BRUSSEL (M.). **Reversibilité du pléomorphisme des dermatophytes.** [Reversibility of pleomorphism in the dermatophytes.]—*C. R. Soc. Biol., Paris*, 146, 15–16, pp. 1258–1261, 1952.

Particulars are given of experiments which demonstrated the reversibility of pleomorphism in a strain of *Ctenomyces* [*Trichophyton*] *persicolor*, isolated from a case of kerion in a 13-year-old boy in Brussels [I, No. 1739], and one of *Epidermophyton floccosum* from marginate eczema in a native girl in the Belgian Congo [I, No. 1996] in cultures containing soil [see preceding and next entries] but no sugar. The former species reverted to the pleomorphic condition on transference to 2 per cent. Sabouraud's dextrose agar, whereas the latter retained the normal aspect acquired on the soil-containing medium.

148. VANBREUSEGHEM (R.) & VAN BRUSSEL (M.). **Pouvoir pathogène des dermatophytes cultivés sur terre.** [Pathogenicity of dermatophytes cultured on soil.]—*C. R. Soc. Biol., Paris*, 146, 15–16, pp. 1261–1263, 1952.

Strains of *Ctenomyces* [*Trichophyton*] *interdigitale* and *T. rubrum* were still pathogenic to guinea-pigs after culture for 71 and 66 days, respectively, on a soil-containing medium [see preceding entries]. A cat's hair parasitized by *Sabouraudites* [*Microsporum*] *canis* was pathogenic to a guinea-pig after 19 days' culture on soil, while that of a dog infected by the same species was successfully inoculated after 15 days into the thigh of a 19-year-old girl suffering since the age of seven from onychomycosis due to *T. rubrum*.

149. VANBREUSEGHEM (R.) & WILLAERT (L.). **À propos de l'isolement d'un dermatophyte *Epidermophyton floccosum* des crachats d'un malade.** [On the isolation of a dermatophyte, *Epidermophyton floccosum*, from the sputum of a patient.]—*Arch. belges Derm.*, 8, 1, pp. 209–212, 1952. [Flemish and English summaries.]

The author isolated *Epidermophyton floccosum* on four occasions from the sputum of a patient suffering from a pulmonary complaint and carrying Hebra's marginate eczema in both inguinal folds. It was demonstrated that the fungus did not originate in the sputum but had passed into it from the patient's hands. The dermatophyte was also found in the nasal cavities, under the nails of the index and little fingers of the right hand, and in a specimen of the urine.

150. McCORMACK (PAULETTE) & BENHAM (RHODA W.). **An unusual finding in *Epidermophyton floccosum*.**—*J. invest. Derm.*, 19, 5, pp. 315–317, 4 figs., 1952.

Attention is drawn to the development in three strains of *Epidermophyton floccosum* on potato dextrose and maize meal agar plates of tightly-coiled, spring-like spirals resembling those observed in the *Trichophyton gypseum* group. In recent studies at the College of Physicians and Surgeons, Columbia University, New York, the structures began to appear after a fortnight and were abundant by the end of a month.

151. JANKE (D.). **Experimentelle Untersuchungen über die antimykotische Wirkung verschiedener Antibiotika.** [Experimental studies on the anti-mycotic action of various antibiotics.]—*Klin. Wschr.*, 30, 15–16, p. 366, 1952.

In experiments at the University Skin Clinic, Marburg, Germany, *Trichophyton purpureum* [*T. rubrum*] was the only one of five pathogenic fungi in peptone-malt agar cultures to be inhibited by terramycin at a concentration of 20 mg. per cent., but at 50 mg. and upwards the antibiotic was not only fungistatic but fungicidal to the same organism, *T. interdigitale*, *Candida albicans*, *Sporotrichum beurmanni* [*S. schenckii*], and (to a lesser degree) *T. gypseum*.

None of the above-mentioned fungi was adversely affected by chloromycetin at any of the concentrations tested.



Penicillin at a dosage of 2 units per ml. exerted a marked qualitative and quantitative stimulus on the development of *T. interdigitale* and *T. rubrum*, while the other species were unaffected by its introduction into the cultures.

152. OKAZAKI (K.) & OSHIMA (S.). **Antibacterial activity of higher plants. XXII. Antibacterial effect of essential oils. (3) Fungistatic effect of clove oil and eugenol.**—*J. pharm. Soc. Japan*, 72, pp. 564–567, 1952. [Abs. in *Chem. Abstr.*, 46, 18, p. 8811, 1952.]

At the University of Niigata, Japan, the growth of *Trichophyton*, *Achorion*, and *Epidermophyton* spp. on Sabouraud's glucose agar was inhibited [cf. next entry] by clove oil and eugenol at concentrations of 1 in 8,000 to 1 in 16,000, the effect remaining constant by the addition of serum. The fungi did not acquire resistance to the oils, which exerted no irritant action, suggesting their clinical application.

153. OKAZAKI (K.) & KAWAGUCHI (T.). **Chemotherapeutics for dermatomycoses. IV. Fungistatic and sporostatic activity of antihistamines.**—*J. pharm. Soc. Japan*, 72, pp. 1400–1402, 1952. [Abs. in *Chem. Abstr.*, 47, 4, p. 1883, 1953.]

Of several antihistamines tested at the University of Niigata, Japan, for their inhibitory action on species of *Trichophyton*, *Achorion*, and *Epidermophyton* [cf. preceding entry], benadryl [1, Nos. 1529, 2175, 2204, 2222] and antergen proved to be effective. The molecules of fungistatic antihistamines contain benzohydrol, phenothiazine, and benzylaniline groups. The fungistatic and sporostatic effects of these groups were much more potent than their antihistaminic activity, indicating that their efficacy against the dermatophytes resides in the nuclear group.

154. OLÁH (D.) & MÁRAMOSI (G.). **Zur Methodik der experimentellen Prüfung der Wirksamkeit antimykotischer Mittel.** [On the procedure for the experimental testing of the efficacy of anti-mycotic preparations.]—*Dermatologica*, 105, 3, pp. 162–166, 1952. [English and French summaries.]

At the National Research Institute for Medical Mycology, Debrecen, Hungary, the authors carried out *in vitro* tests to determine the efficacy of various chemicals used in the control of dermatophytes, e.g., *Trichophyton gypseum*, *Microsporum audouinii*, and *Achorion [T.] schoenleini*. The concentrations and periods of activity sufficing to inhibit growth in culture proved to be totally inadequate on application to the same organisms taken from the skin, which should, therefore, be exclusively used for efficiency assays.

155. REISS (F.) & DOHERTY (D. D.). **Podophyllum resin in treatment of tinea capitis.**—*J. Amer. med. Ass.*, 147, 3, pp. 225–226, 1951.

A report is submitted from Bellevue Hospital, New York, on 121 cases of tinea capitis in children treated with a 0.2 per cent. resin of podophyllum ointment [1, Nos. 2022, 2351] alone and in combination with X-ray epilation. The causal organism in 109 was *Microsporum audouinii*, in eight *M. lanosum* [*M. canis*], and in one each *Trichophyton sulphureum*, an identified endothrix, *T. crateriforme* [*T. tonsurans*], and *T. violaceum*. Of the 105 followed up, 56 were cured (30 with podophyllum resin alone and 26 with the ointment and epilation combined), 19 improved, 21 unchanged, and 9 showed spread of infection. The period required to effect a clinical cure with the ointment alone ranged from a fortnight to seven months, roughly the same as when the two methods were combined.

156. SCHWEBEL (S.), SNYDER (W.), & SLINGER (W. N.). **Ineffectiveness and toxicity of podophyllin in treatment of tinea capitis.**—*J. Amer. med. Ass.*, 149, 3, p. 261, 2 figs., 1952.

Of 19 cases of tinea capitis (*Microsporum audouinii*) treated with 0.2 per



cent. podophyllin [see preceding entry] in carbowax, only two were cured. In only one of the eight patients developing an inflammatory reaction at the site of application was a possibly beneficial effect exerted on the course of the complaint. In three cases of an earlier series the treatment was followed by a peculiar toxic alopecia. A brief report is given on a fruitless attempt to cure a case of two months' duration in a five-year-old negro boy at the Cincinnati (Ohio) General Hospital by three weeks' topical therapy with podophyllin.

157. GORDON (M. A.). **In vitro fungistatic effect of tetrachloroparabenzoquinone.**—*Arch. Derm. Syph., Chicago*, 66, 5, pp. 573-576, 1952.

At the Communicable Disease Center, Public Health Service, Federal Security Agency, Atlanta, Georgia, spergon (tetrachloroparabenzoquinone) [see next entry] was shown by the broth dilution, agar cup diffusion, and agar slant methods of assay to be an efficient inhibitor at low concentrations of the commoner dermatophytes, represented by *Microsporum canis*, *M. gypseum*, *M. audouini*, *Trichophyton rubrum*, *T. mentagrophytes*, and *Epidermophyton floccosum* [1, Nos. 1520, 2177].

158. MOORE (M.). **Masking of florescence by tetrachloroparabenzoquinone.**—*Arch. Derm. Syph., Chicago*, 66, 5, pp. 621-623, 1 fig., 1952.

The examination of hairs from patients with tinea capitis (*Microsporum audouini*) at the Barnard Free Skin and Cancer Hospital, St. Louis, Missouri, disclosed a masking of fluorescence under Wood light following treatment with spergon (tetrachloroparabenzoquinone) [see preceding entry]. The hairs become brittle, with breaking points along the shaft, and spores are not always detected in potassium hydroxide preparations because of heavy crystal deposits of the chemical. Lack of fluorescence in lesions thus treated should not, therefore, be accepted as an indication of cure.

159. DANIELS (G.). **Structures resembling fuseaux in a case of ringworm of the scalp due to *Microsporum canis* Bodin and *Microsporum audouini* Gruby.**—*Brit. J. Derm.*, 65, 3, pp. 95-98, 3 figs., 1953.

A case of tinea capitis in a four-year-old Manchester boy caused by combined infection with *Microsporum canis* and *M. audouini* is reported. Septate, boat-shaped elements, identical with those recently described as macroconidia [1, No. 2503], were observed mainly along the longitudinal axis of the hair shaft.

160. HAVYATT (M.). **The treatment of *Microsporum canis* infection of the scalp with dibromopropamidine isethionate.**—*Aust. J. Derm.*, 1, 4, pp. 239-241, 1952.

The average period required for the cure of 23 cases of tinea capitis (*Microsporum canis*) at the Royal Prince Alfred Hospital, Sydney, by the topical application of dibromopropamidine isethionate ointment (1.5 per cent. w/w in a water-miscible base) was 7.1 weeks.

161. MOORE (M.), CROTTY (R. Q.), & LANE (C. W.). **Cicatrizing tinea capitis caused by *Trichophyton rubrum* (*Trichophyton purpureum*).**—*Arch. Derm. Syph., Chicago*, 66, 3, pp. 363-366, 2 figs., 1952.

Full clinical details are given of a case of tinea capitis caused by *Trichophyton rubrum* in an 11-year-old boy at the Barnard Free Skin and Cancer Hospital, St. Louis, Missouri. The scarring alopecia of the scalp, of two years' duration, was accompanied by an eruption on the body and arms which had persisted for three years, and several of the toe-nails were also involved. After nearly a year of treatment, comprising the topical application of various ointments, e.g., desenex [1, No. 1267] and bacitracin [1, No. 1571], and other remedial measures, including X-ray epilation, the fungus was still active in the scalp and nails, although the trunk lesions had completely cleared.